Volume 84
Number 24

IRON TRADE REVIEW

Cleveland, O.
June 13, 1929

"Informed Leadership"—

America's Greatest Need, "to Maintain the Dynamic Equilibrium of Business"

While the report of the President's Conference Committee on Recent Economic Changes in the United States makes suggestion, rather than recommendations, certain conclusions are emphasized and stated as highly important to business men. In the two volumes recently published by the committee no more significant paragraphs can be found than the following, which are taken from its summary. An abstract of the report is published on succeeding pages. Herbert Hoover was a member of the committee which made the report.

TO MAINTAIN the dynamic equilibrium of recent years is, indeed, a problem of leadership which more and more demands deliberate public attention and control. Research and study, the orderly classification of knowledge, joined to increasing skill, well may make complete control of the economic system a possibility. The problems are many and difficult, but the degree of progress in recent years inspires us with high hopes.

In the marked balance of consumption and production, for example, the control of the economic organism is increasingly evident. With the development of a stream of credit to facilitate business operations, and with flexible power to energize industry and to increase the effectiveness of the workers, has come an increasing evenness in the flow of production.

Once an intermittent starting and stopping of production-consumption was characteristic of the economic situation. It was jerky and unpredictable, and overproduction was followed by a pause for consumption to catch up. For the seven years 1922 to 1929, a more marked balance of production-consumption is evident. With greater knowledge of consuming habits, with more accurate records of the goods consumed, a sensitive contact has been established between the factors of production and consumption.

Increasing skill and scientific data have made the anticipation of demand far more accurate, and by accurate anticipation the deliberate balance between production and consumption has in a measure been maintained. By advertising and other promotional devices, by scientific fact finding, by a carefully predeveloped consumption, a measurable pull on production has been created which releases capital otherwise tied up in immobile goods and furthers the organic balance of economic forces. In many cases the rate of production-consumption seems to be fairly well under control.

As long as the appetite for goods and services is practically insatiable, as it appears to be, and as long as productivity can be consistently increased, it would seem that we can go on with increasing activity. But we can do this only if we develop a technique of balance.

Informed leadership is vital to the maintenance of equilbrium.

Industry Geared to Higher Speed, Chief of Economic Changes

President's Conference Committee Analyzes Influences Affecting Employment and Living Standards—Workers' Status Best in History—More Attention Needed for "Technological" Unemployment

ACCELERATION rather than structural change is the key to an understanding of our recent economic developments. Gradually the fact has emerged that the distinctive character of the years from 1922 to 1929 owes less to fundamental change than to intensified activity.

Forty years ago David A. Wells wrote his "Recent Economic Changes," showing that the quarter century which ended in 1889 was a period of "profound economic changes," which he described as "unquestionably more important and varied than during any former corresponding period of the world's history."

Each generation believes itself to be on the verge of a new economic era, an era of fundamental change, but the longer the Committee on Recent Economic Changes deliberated, the more evident it became that the novelty of the period covered by its survey rested chiefly in the fact that developments such as formerly affected our old industries have been recurring in our new industries. The changes have not been in structure but in speed and spread.

Invention is not a new art. Transportation and communication are not new services. The facilitating function of finance is older than coined currency. Agriculture is as ancient as history. Competition is not a new phenomenon. None of the changes in distribution on which emphasis has been laid in the last few years is basically new. Hand-to-mouth buying is old; sudden changes in style and demand are familiar; there is no new principle in installment selling; cooperative marketing is no modern discovery; the chain store movement dates back at least 25 years. But the breadth and scale and *tempo* of recent developments give them new importance.

The increased supply of power and its wider uses; the multiplication by man of his strength and skill through machinery, the expert division and arrangement of work in mines and factories, on the farms, and in the trades, so that production per man hour of effort has risen to new heights; the quickening of these instrumentalities through capital provided from the surplus incomes of a constantly widen-

1922 to 1929 in Industrial America

Some of the highlights from the report of the President's Conference Committee which surveyed economic changes of the past seven years

THE synchronizing of a high wage level and a stationary cost of living have created a phenomenon with widespread influence on the economic situation... . . We have become consumers of what we produce to an extent never before realized.

* * *

Leaders of industrial thought were quick to grasp the significance of the power of the consumer with money to spend to create an accelerated cycle of productivity . . . Its application on a broad scale is a fundamental development.

* * *

Economically we have a boundless field before us; new wants will make way for newer wants, as fast as they are satisfied . . . We seem only to have touched the fringe of our potentialities.

* * *

A considerable margin of optional consumption, optional in the sense that this portion of the income may be saved or spent . . . represents one of the marked characteristics of the recent economic situation.

* * *

Few current economic developments have made such widespread change in our national life or promise so much for the future as the utilization of our increasing leisure.

* * *

We now apply to many kinds of services the philosophy of large-scale production. These have helped to create new standards . . . and have afforded employment for millions of workers crowded out of agriculture and the extractive and fabricating industries.

* * *

Notwithstanding reduction in hours of labor . . . the increase in per capita productivity in manufacturing from 1922 to 1925 was 35 per cent, and productivity of farm workers increased at a rate probably never before equaled.

* * *

The time has come to devote continuing attention not only to cyclical unemployment but to "technological" unemployment. While "technological" unemployment works hardship on those workers displaced by machinery or improved processes, the social gain is real and permanent. Such readjustments are due to progressive needs of society.

ing proportion of our people—all these represent an accumulation of forces which have long been at work.

The committee, like other observers, was early impressed by the degree of economic activity in these seven years. It was struck by the outpouring of energy which piled up skyscrapers in scores of cities; the 48 states together with 20,000 miles of airways, moved each year over railways and waterways more than a billion and a half tons of freight; thronged the highways with 25,000,000 motor cars; carried electricity to 17,000,000 homes; sent each year 3,750,000 children to high school and more than 1,000,000 young men and women to college; and fed, clothed, housed, and amused the 120,000,000 persons who occupy our twentieth of the earth's habitable area.

But while the period from 1922 to 1929 has been one of intense activity, the committee noted that this activity has been "spotty." Certain groups have been more active than other groups; certain industries busier than their neighbor industries, and certain geographical areas more prosperous than other areas. Progress has been made toward more stable employment in seasonal industries, yet "technical" unemployment, resulting from the displacement of workers by improved machinery and methods, has attracted attention.

Geographical Differences Noted

Geographical differences also are noted. The Pacific states have made an extraordinary advance; the South has rapidly developed as a manufacturing area; the East North Central division has grown; while the New England states and to some extent the Middle Atlantic section, have developed less rapidly and have experienced some difficulties in adapting their older industries to new conditions.

However, in spite of this variability, this difference in activity as between groups and areas and industries, the rising standard of living characteristic of this period was widespread, and has reached the highest level in history.

Participation by the people as a whole in many of the benefits of increased productivity, which of itself varied as between different groups and geographical areas, has been one of the marked characteristics of the period. While industrial, agricultural, and commercial activity has been "spotty," the broad social advantages of our accelerated activity flowed out over the land.

For example, the highway building programs throughout the nation were not limited to the intensely active areas; good roads were extended in all directions, serving the whole population. The same might be said for educational advantages, radio entertainment, personal mobility made possible by low priced motorcars, swift and dependable transportation and communication, and numerous other facilities and services making for comfort and well-being, beyond the elemental requirements of food, clothing and shelter.

This spread of higher living standards has been characteristic of our national life practically throughout our history. As a phenomenon it is not new, but in its degree and scope it has taken on a new importance.

Characteristic also has been the rise in the use of power—three and three-quarters times faster than the growth in population and the extent to which power has been made readily available not alone for driving tools of increasing size and capacity, but for a convenient diversity of purposes in the smallest business enterprise and on the farm and in the home.

"We use as much electrical energy as all the rest of the world combined."

Factories no longer need cluster about the sources of power. Widespread interconnection between power plants, arising out of an increasing appreciation of the value of flexibility in power, and made possible by technical advances during recent years, has created huge reservoirs of power so that abnormal conditions in one locality need not stop the wheels of industry.

The increasing flexibility with which electricity can be delivered for power has enabled manufacturers and farmers to meet high labor costs by the application of power-driven specialized machines; and power in this flexible form has penetrated into every section of the United States, including many rural areas. The survey shows that as a nation we now use as much electrical energy as all the rest of the world combined.

Through the subdivision of power the unskilled worker has become a skilled operator, multiplying his effectiveness with specialized automatic machinery and processes. Thus the unit cost of production has been reduced, the drudgery eliminated from much unskilled work, and wages maintained or actually increased.

This acceleration of forces and its resultant rising standard of living have been facilitated by a continuing supply of funds. In the breadth of the sources from which capital and credit have been available and in the quickening method of their use, may be observed again the changes in speed and spread of our recent economic activity.

In former periods the savings funds of the American people were not alone adequate for our capital requirements. In periods of business expansion the demand for funds pressed heavily upon the supply. The reverse has been found to be true in the period under review. For the larger part of this period not only the earnings and savings of the people supplied the additional capital for financing the rapid development of industry, but in addition they furnished several billions of dollars for loans to foreign countries.

Millions Invest Savings

Stimulated by the urge for funds to finance the vast production program of the United States during the World war, the number of share holders in the country's business enterprises has, it is estimated, grown from about two million to more than seventeen million; and out of increasing incomes these investors have continued to pour their savings into credit.

During the later months of the period covered by the survey a new tendency has been observed. Investors, as well as a large body of speculators, have invested through the stock exchanges not only their savings, but the proceeds of loans secured through banks and brokers, until the credit structure of the country has been sufficiently weighted to indicate a credit stringency, resulting in an abnormally high rate for call money and an appreciable increase in the rate of interest for business purposes. The consequences of this process cannot be measured at this time, but they are factors in the problem of maintaining economic balance.

Meanwhile industry has been able to reduce its requirements for short-term credits from the banks through issuance of securities. The preference for permanent methods of financing

business is reflected in the relatively small increase in commercial loans of banks in recent years, as contrasted with the increase in security holdings and collateral loans.

Imports of gold early in the period covered by the survey which tended to make credit easier; the growth of savings in spite of increased spending; the popular confidence in the financial structure, especially in the federal reserve system; and the power of the system to move available credit to the places where it is needed, mark a great advance during these seven years.

There has also been an increase in the velocity of the turnover of credit, due to improved transportation and communication, scientific control of inventories, the continuation of the simplification movement, and our accelerated turnover of commodities. Business has thus developed a new degree of economy in the use of credit, which may be set down as another characteristic of the period.

* * *

Price Relationships, Wages, And the Cost of Living

THE period from 1922 to 1929 is perhaps too brief for a definite judgment, and we are as yet too close in point of time to get an accurate perspective, but the committee feels that in the field of price relationships, wages, and the cost of living is to be found one of the striking and significant developments revealed by the survey, and one which more than any other gives these years their distinctive character.

Contrasting two periods of our comparatively recent economic history will perhaps serve to make clear the significance of these factors.

According to the best available statistics, in the period between 1896 and 1913, the wholesale price level rose on the average 2.3 per cent a year, but wages rose only a little more; so that their purchasing power advanced only 0.5 per cent a year. In the period from 1922 to 1927, prices declined on the average 0.1 per cent a year, while the purchasing power of wages rose 2.1 per cent a year.

In this latter period the fortunate synchronizing of a high wage level and a stationary cost of living created a phenomenon, new in degree, which had widespread influence on the economic situation, and which will bear close study in its details.

The increasing tendency toward price stability, both as between classes of commodities and in the price experience of individual commodities, was a characteristic of the period under review, tending toward a more equitable basis of exchange of products among the various groups. Price fluctuations seem to have been held within narrow limits during this period by a combination of factors; a more complete background of statistical information making possible better judgment regarding supply and demand on the part both of producers and consumers; prudence on the part of management; cost reductions by technicians, skill on the part of bankers, an enlightened attitude on the part of labor, and the expansion of foreign markets.

Relative price stability has involved a change in the direction in which business men look for profits. Profits made from the fluctuations of individual commodity prices, and from changes in the relation among prices, have tended to diminish.

Whether the price relationships of recent years prove to be transitory or permanent, they represent today a huge gain which is reflected in all parts of the economic organism. It is a development too new to permit of dogmatic interpretation but the committee believes that this decreasing variability in prices at a time when the productivity per hour of labor has been greatly increased, and the demand for goods has been greatly stimulated, is one of the most significant factors disclosed by the survey.

The widening gap between wages and the cost of living—wages increasing while the cost of living was stationary—may be assumed to have contributed definitely to the degree of prosperity which has characterized the period as a whole. With rising wages and relatively stable prices we have become consumers of what we produce to an extent never before realized.

Advanced Economic Point of View

The factors in this situation appear in part to be accidental and in part the consequences of an advanced economic point of view.

In the early postwar period much of the press and many employers demanded a "liquidation" of labor. It was freely declared that business could not settle down until wages were brought back to prewar levels. Labor had enjoyed a higher standard of living and naturally opposed wage cuts.

This might have precipitated a period of serious strife, had it not been that leaders of industrial thought, watching the trend of affairs, noted that the result of the continuance of high wages was that the dammed-up purchasing desires which had been held back during the war on account of the national economic program, burst forth and not only the high wages which were being currently earned but accumulated savings as well were poured into the channels of commerce.

They were quick to grasp the significance of the power of the consumer with money to spend to create an accelerated cycle of productivity. They began consciously to propound the principle of high wages and low costs as a policy of enlightened industrial practice. This principle has since attracted the attention of economists all over the world, and while it is in no sense new, its application on a broad scale is so novel as to impress the committee as being a fundamental development.

* * *

Production Increase and Expansion of Human Wants

PARTLY as a result of this newly sensed principle of an accelerated cycle of production-consumption, and partly by reason of the development of a stream of credit and an abundance of flexible power made broadly available, the years 1922 to 1929 witnessed a marked increase in the physical volume of production. Some years stand out more conspicuously than others; two—1924 and 1927—show minor recessions; but the period as a whole has been notably consistent.

Since 1922 primary production has been increasing 2.5 per cent a year; manufacturing 4 per cent; and transportation 4 per cent. Taking 1919, a year of fair harvests, as a base, crop production in 1922 was 102; in 1925, 104; in 1927, 106.

There have been prosperous periods in the past which may have surpassed these rates of increase, but none so far as the committee can learn which has shown such a striking increase in productivity per man-hour. Notwithstanding the reductions in hours of labor, per capita productivity is nearly 60 per cent greater than it was toward the close of the nineteenth century; the increase in per capita productivity in manufacturing from 1922 to 1925 was 35 per cent; the productivity of farm workers has increased at a rate probably never before equaled.

And these increases in productivity have been joined to a corresponding increase in the consuming power of the American people. Here has been demonstrated on a grand scale the expansibility of human wants and desires.

Economists have long declared that consumption, the satisfaction of wants, would expand with little evidence of satiation if we could so adjust our

economic processes as to make dormant demands effective. Such an expansion has been going on since the beginning of the industrial revolution. It is not a phenomenon of the post-war period, except in degree. But it is this degree of economic activity, this almost insatiable appetite for goods and services, this abounding production of all things which almost any man can want, which is so striking a characteristic of this period.

The rapidly increasing number of families in the United States having a considerable margin of earnings available for "optional consumption"—optional in the sense that this portion of the income may be saved or spent, and if spent the manner of its spending may be determined by the tastes of the consumer or the nature of the appeals made to him by the industries competing for his patronage—presents one of the marked characteristics of the recent economic situation. It is the personal or individual expression of the gap between rising wages and the stable cost of living.

Leisure Becomes "Consumable"

Closely related to the increased rate of production-consumption of products is the consumption of leisure. It was during the period covered by the survey that the conception of leisure as "consumable" began to be realized upon in business in a practical way and on a broad scale. It began to be recognized, not only that leisure is "consumable," but that people cannot "consume" leisure without consuming goods and services, and that leisure which results from an increasing man-hour productivity helps to create new needs and new and broader markets.

The work week has been shortened in the factory by better planning and modern machinery, and the work day was shortened in the home by the increased use of time-and-labor-saving appliances and services.

Few of the current economic developments have made such widespread changes in our national life or promise so much for the future as the utilization of our leisure.

The service functions are not new, but few of the developments revealed by the survey are of greater potential significance than the accelerated growth of our service industries—travel, entertainment, education, insurance, communication; the facilities of hotels, restaurants, delicatessen stores, steam laundries, and public libraries, to mention but a few.

An evolution which has been going on for centuries has only recently been revealed as a mass movement. We now apply to many kinds of services the philosophy of large-scale production. We have integrated these services and organized them, and we have developed the new philosophy to such a degree in recent years that we now have what might be termed "mass services." These have helped to create a new standard of comfortable living in the United States, and have afforded employment for millions of workers crowded out of agriculture and the extractive and fabricating industries.

The survey seems to indicate that the time has come to devote continuing attention not only to the problems of cyclical unemployment but also to the newer problem of "technological" unemployment if we are to forestall hardship and uncertainty in the lives of the workers.

It involves, in many instances, learning new trades, and, in most instances, the loss of time in securing other jobs. Yet from a broad social point of view, while it works hardship on those workers displaced by the introduction of machinery or improved processes, the social gain is real and permanent.

Simple Furnace Has Preheating Facilities for Large Castings

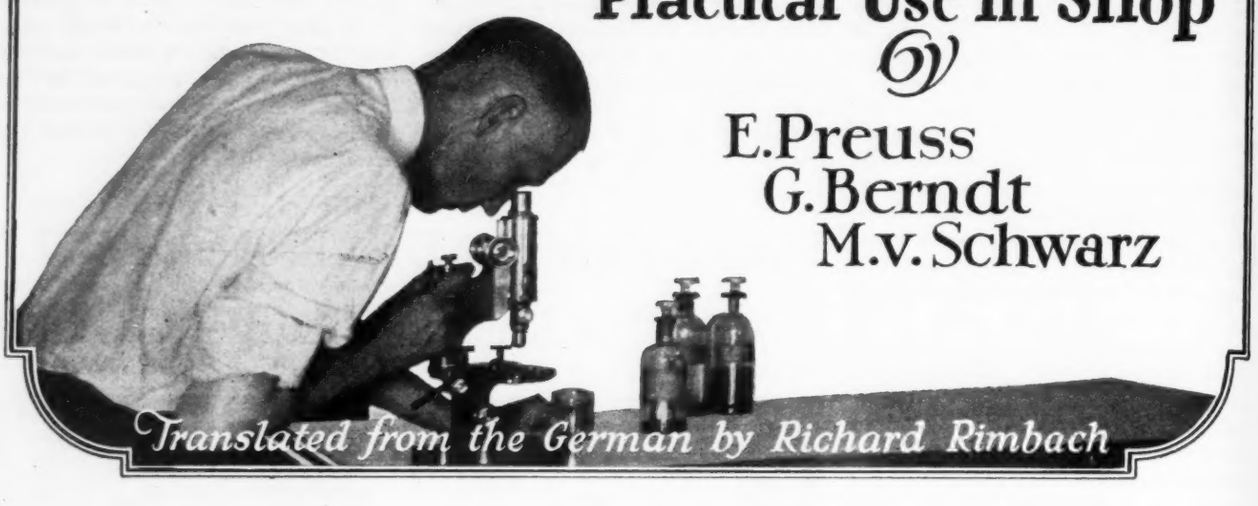
A preheating furnace made of loose firebrick laid without mortar

A PRACTICAL and economical method of preheating large pieces or castings preparatory to welding is the use of the temporary firebrick furnace. This is built of loose firebrick laid without mortar. It is quickly constructed and can be built to any size desired. The accompanying illustration shows a large preheating furnace encasing a heavy iron casting. Asbestos paper, having holes for draft if necessary, forms the top of the furnace. The spacing of the bricks around the base of the furnace assures sufficient draft to raise the piece to the proper temperature.

To keep a desired temperature, the fire must be regulated occasionally while the welding progresses. This is done by opening or closing the draft holes, rearranging the asbestos paper covering, moving hot coals from one place to another, or replenishing the fire wherever necessary. This important detail usually is performed by a helper. When the casting has reached an even, dull red heat, an opening is made in the asbestos paper cover just large enough to uncover the weld area, and welding is done through this hole.

After the weld is completed it is just as important to secure proper cooling. The entire casting or piece should be covered with fresh charcoal and brought up to an even heat. With the asbestos covering intact, the finished work should be allowed to cool and contract evenly in the dying fire. It is important that one part does not cool quicker than any other. If this happens the piece may crack due to strains.

Metallography Simplified for Practical Use In Shop



By
E. Preuss
G. Berndt
M. v. Schwarz

Translated from the German by Richard Rimbach

Chap. XII—Rolling and Cold Working of Steel (Concluded)

EXAMINATION of material by X-rays often makes cracks and defects clearly visible in the shadowgraphs. In most cases it is possible to observe the defects in thin pieces of heavy metals and also in thicker pieces of light alloys on the fluorescent screen. Otherwise, a light sensitive plate or film is used, and X-ray photographs are obtained as shown in Figs. 207, 210, 211, and 212.[98] Pipes and segregations also can be detected in this way. Fig. 210 shows a carbon-steel boiler plate of a vacuum evaporator for caustic soda. It is typical that almost all cracks emanate from the rivet holes or parallel to the line of the rivet holes. Fig. 211 shows the X-ray photograph of an overdrawn wire with large inner hollow spaces. How large these inner hollow spaces of an overdrawn wire can be, is illustrated by the polished longitudinal section, of Fig. 212, double size. These two photographs reveal how valuable X-rays are in testing materials because it makes possible

Metallography Series Nears Completion

INCLUSIONS, slags and welds are the subjects to be considered in Chap. XIII, the first installment of which, will be presented in the June 27 issue of IRON TRADE REVIEW. *Chap. XIII, incidentally, will be the final chapter of Part II. It will discuss inclusions in iron, which often have their origin in the sulphur content, and those occurring in carbon steel, differing, however, from slags that occur in wrought iron. The structure of metal in welded joints also will be given attention. Part III, the appendix, will conclude this series of articles on metallography which was commenced in June 14, 1928 issue of* IRON TRADE REVIEW *and which has appeared serially at two-week intervals since that time.*

Fig. 205—Cross section of a boiler plate of soft steel, with slip lines. Etched microscopically. X 150 (M. von Schwarz)

Fig. 206—Slip lines of manganese steel (Fig. 100) after cold working. Etched microscopically. X 150

[98] Compare M. von Schwarz: Zeitschr. d Bayer. Revisions-Vereins, 1926. Nos. 5 and 6, and Zeitschr. f. Metallkunde, Vol. 19, No. 5 (1917) Page 215.

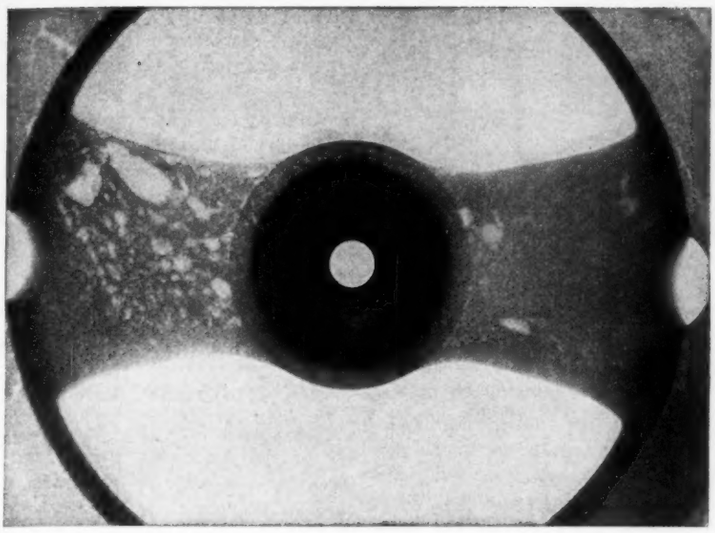


Fig. 207—X-ray photograph of a defective die casting, showing numerous inner defective places. X 1

the detection of structural defects without destroying the object.

In castings, where pipes and segregations often occur at enlarged sections, X-ray examination is of great

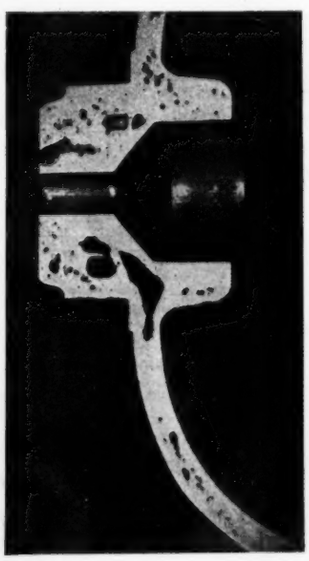


Fig. 208—Section through a defective die casting corresponding to that of Fig. 207, showing numerous hollow places, which already could be recognized in the X-ray photograph. X 1

service, particularly if the method of casting, arrangement of gate, the riser, etc., is to be examined. This is of special importance in pieces which have been die cast, because here the shape of the mold is of decisive importance. Fig. 207 shows an X-ray photograph of a defective die casting before the mold was shaped properly.[68] Fig. 208 represents a longitudinal section of the center piece of the same die casting in which the numerous hollow spaces in this defective piece can be seen clearly.

The X-ray also affords a method for detecting rolling seams or laps. Any defects in the structure of the seams or laps will be apparent in the shadowgraphs or X-ray photographs.

By determining the dimensions of the crystals in sections through a cold-worked metal, the degree of elongation which the material has undergone can be determined approximately because the elongation is directly related to the deformation of the grains. Fig. 213 shows the method described by E. Heyn and O. Bauer,[70] in which the diagram of the structure is drawn on cross-section paper. It is necessary only to count how many grains are intersected by each line or by each fifth or tenth line in horizontal or vertical direction, as the ratio of these numbers gives directly the degree of elongation to which these crystals have been subjected. The ratio here is about 1:10 because the vertical lines cut on an average, in Fig. 213, about 20 crystals, while the horizontal lines of equal length cut on an average of only 2.

As it is often important to deter-

[68]Compare the paper by M. von Schwarz at the general meeting of the Deutsche Ges. fuer Metallkunde in Stuttgard, June 28, 1926.

[70]From Metallographie, Vol. 1, Page 69, Fig. 44, 1926.

Fig. 209—Rolling seams, caused by rolling over the overfill on the edges. Unetched. X 100 (O. Koehnke)

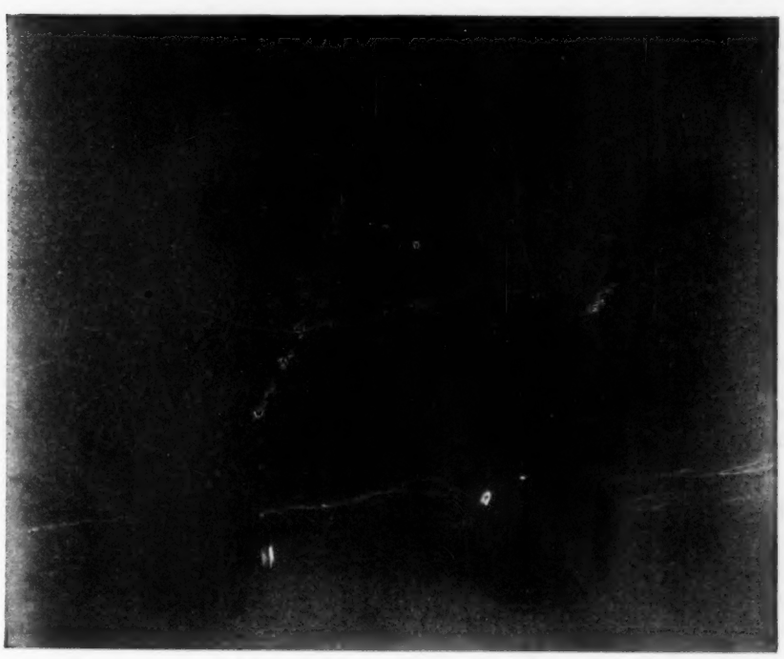


Fig. 210—X-ray photograph of a caustic soda vacuum evaporator with many cracks, most of which emanate from the rivet holes. X 1 (M. von Schwarz)

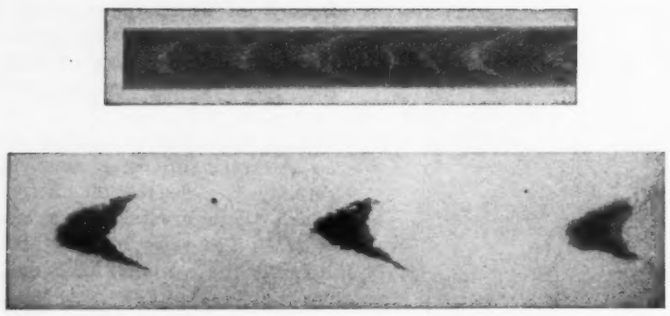


Fig. 211 (Top)—X-ray photograph of a coated wire, showing lightly the inner hollow places. X 1 (M. von Schwarz). Fig. 212 (Bottom)—Polished longitudinal section through the coated wire of Fig. 211, showing the pronounced expansion of the inner hollow spaces not visible on the outside. X about 2

mine the sizes of the crystals themselves, the simplest methods are given here. Either a number of crystal diameters are measured with an optical micrometer and the mean value taken of a drawing or photomicrograph at a known magnification. From this information the average grain size can be computed. If the metal is coarse grained so that a large number of grains can not be put on the plate available, the incomplete crystals on it must also be taken into account. If the field of view is round, the number intersected by the periphery is multiplied by 0.6, or for a rectangular area by 0.05, and this number then added to the number of complete crystals in the field of view.

In gamma iron, Fig. 100, and other metals, there occurs, after cold working and recrystallization, a clearly pronounced "twin-formation" which seldom is observed in alpha iron. In cold-worked boiler plates "slip lines," or lines running parallel to one another, as indicated in Fig. 205, are observed in the ferrite crystals. Fig. 206 represents the etched surface of the manganese hard steel shown in Fig. 100 with numerous slip lines in the individual grains of the solid solution which originated from cold working. No confusion must be made between the fine cracks due to internal stress and the so-called rolling cracks which occur when a protruding fin is not welded to the other material due to its heavy oxide or rust layer, as shown in Fig. 209. The open surface blowholes of ingots often are the cause of this.

Studying Blast Furnace Stock Column

Results of another step taken by the United States bureau of mines, in its investigations of blast furnace operation are given in technical paper, 442, by S. P. Kinney, just published. Samples of the gas and stock in a 700-ton furnace, data on the rate of descent of stock, measurements of temperature, and data on the volume and velocity of the gas were taken through holes in the shell and lining of the furnace at certain planes or elevations. An attempt was made to follow the steps in reduction of the charge during its descent in the furnace shaft.

The data collected in the shaft of the furnace were obtained from four planes above the mantle. A series of sets of gas samples, temperature, and static and velocity pressure observations was taken on each plane.

As a result of this and other similar studies, methods have been developed for the measurement of velocities of gas, temperatures, pressures, and composition of gas across a series of planes at any elevation between the inwall and center of the blast furnace. The combined data from these observations afford an insight into various factors, such as the amount of gas flowing, the temperature, the pressure, the composition of gas, and the rate of flow of gas, and some information in regard to the rate of flow of stock. With these data at hand the progress made in each step in the process of reduction, with descent of stock in the shaft, may be followed. The methods developed also suggest a means for the study of the furnace lines and their effect on operation.

The effect of any change in bell, stock line, bosh or hearth diameter, wall batter, or hearth may be traced directly in the resultant changes in gas composition, temperature, pressure and velocity, if the data are procured before and after the changes are made.

As to the conditions existing on each plane, it has been shown that the rate of gas and stock flow is not uniform across any plane parallel to the hearth. It is probable that the flow of stock in the vicinity of the inwall is more rapid than at the center of the column. Significant information was obtained as to the variation in velocity of gas, the carbon monoxide-carbon dioxide ratio, and the removal of oxygen above the tuyeres.

Further information is given in the paper which may be obtained from the government printing office, Washington, for 30 cents.

Lists Causes of Failure in Gear Teeth

Speaking before the Cincinnati chapter of the American Society for Steel Treating recently, E. F. Davis, metallurgist, Warner Gear Co., Muncie, Ind., discussed the various engineering, mechanical and metallurgical defects causing wear and breakage of gears and how the gear specialist had overcome them by improvements in design and use of advanced mechanical and heat treating equipment.

He showed the need for better gear steels, more free of impurities, and demonstrated the effect of inclusion in reducing cutter life and lowering fatigue values of gear teeth. He showed, furthermore, that not only was the inclusion a source of weakness but the region surrounding the inclusion was of low strength and the total area

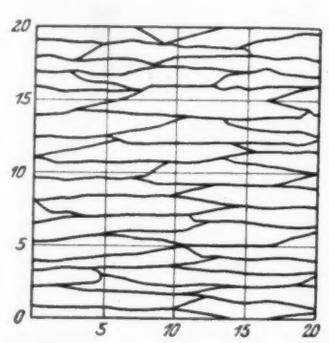


Fig. 213—Method for determining the dimensions of metal crystals (E. Heyn and O. Bauer)

affected was often 10 to 12 times the area of the inclusion itself.

Mr. Davis also illustrated how variation in tooth profile, bad chamfers and corners at the base of teeth affected the impact values of gears. He claimed that bad tooth form was one of the principal causes of early tooth destruction, by the development of friction when the gear tooth starts to wear, and showed the benefits of a cyanided surface in preventing the starting of initial pitting by increasing the intensity of hardness.

Butler Aircraft Corp., Kansas City, Mo., plans the construction of a plant.

Iron and Steel Electrical Engineers Ready for Pittsburgh Convention

A COMPREHENSIVE program has been arranged for the twenty-fifth annual convention of the Association of Iron and Steel Electrical Engineers, to be held at the William Penn hotel, Pittsburgh, June 17-21. Technical sessions are scheduled for the five days of the convention, with an inspection trip to one of the Pittsburgh district steel plants, receptions and other social events as special features.

Nearly 140 manufacturers will be represented with displays in the large exposition to be held in connection with the convention. The exhibits will occupy 40,000 square feet of floor space on the basement and seventeenth floors of the hotel. Officers of the association are planning for the largest gathering in the association's history, with an expected attendance of 1500 delegates and 10,000 visitors and guests.

The convention will open Monday morning, June 17, at 9 o'clock with registration, followed by a business session. President C. S. Proudfoot, Vanadium Corp. of America, Niagara Falls, N. Y., will be in charge. Technical sessions will be held by the three engineering divisions of the association—electrical, combustion and safety—starting Monday morning. General chairmen of these three groups are as follows: Electrical, F. W. Cramer, Republic Iron & Steel Co., Youngstown, O.; combustion, Martin J. Conway, Lukens Steel Co., Coatesville, Pa.; and safety, C. L. Baker, Bethlehem Steel Co., Johnstown, Pa.

The complete list of papers to be presented at these sessions appeared on Page 1531 of the June 6 issue of IRON TRADE REVIEW.

The official opening of the iron and steel exposition will be Monday evening in the main lobby of the hotel. Exhibits will be continued during the week.

An inspection trip of the Aliquippa, Pa., plant of the Jones & Laughlin Steel Corp. will be conducted Thursday afternoon. This trip which will include visitations to the blast furnaces, open hearths, blooming mills, bar and billet mills, skelp mills, rod mills, wire departments, tin plate de-

(*Concluded on Page* 1608)

Exhibitors at Iron and Steel Exposition

Air Reduction Sales Co.
Ajax Electrothermic Corp.
Aluminum Co. of America
Alliance Machine Co.
Allis-Chalmers Mfg. Co.
Appleton Electric Co.
Arch Machinery Co.
Atlas Car & Mfg. Co.
Automatic Reclosing-Circuit Breaker Co.
Automatic Transportation Co.

Babcock & Wilcox Co.
Baker-Raulang Co.
Bartlett-Hayward Co.
Beach, Earl B., Co.
Benjamin Electric Co.
Bittner, Wm. A., Co.
Blaw-Knox Co.
Bristol Co.
Brown Instrument Co.
Bull Dog Electric Products Co.
Bussmann Mfg. Co.

Century Electric Co.
Clark Controller Co.
Clark Tructractor Co.
Cleveland Crane & Engineering Co.
Colts Patent Fire Arms Mfg. Co.
Combustion Engineering Corp.
Crocker-Wheeler Electric Mfg. Co.
Crouse-Hinds Co.
Cutler-Hammer Inc.

De Laval Separator Co.
Delta Star Electric Co.
Detrick, M. H., Co.
De Walt Products Corp.
Dixon, Joseph, Crucible Co.
Dot Lubricating Co. of Pittsburgh
Doubleday-Hill Electric Co.
Duquesne Light Co.

Economy Fuse & Mfg. Co.
Edison Storage Battery Co.
Electric Controller & Mfg. Co.
Electric Journal
Electric Machinery Mfg. Co.
Electric Service Supplies Co.
Elliott Co.
Erie Malleable Iron Works

Fafnir Bearing Co.
Fairbanks-Morse & Co.
Fort Pitt Steel Casting Co.
Frigidaire Corp.
Foxboro Co.

General Electric Co.
General Electric Supply Co.
Great Western Fuse Co.

Henrite Products Co. Inc.
Hiles, John D., Co.
Hodson Corp.
Homestead Valve Mfg. Co.
Hyatt Roller Bearing Co.

Ideal Commutator Dresser Co.
I-T-E Circuit Breaker Co.
Ivanhoe Division Miller Co.
Industrial Engineering Co.

Jefferson Electric Co.
Johns-Manville Inc.
Lavino, E. J., Co.

Kerr, W. G., & Co.
Keystone Lubricating Co.
Kier Fire Brick Co.

Lanning, J. Frank, Co.
Lebanon Steel Foundry
Le Carbone Brush Co.
Lincoln Electric Co.

Manning Maxwell & Moore Co. Inc. (Shaw Crane Div.)
Martindale Electric Co.
Mesta Machine Co.
Metal & Thermit Corp.
Metropolitan Devices Corp.
Michigan Steel Casting Co.
Monitor Controller Co.
Morgan Engineering Co.
Morse Chain Co.
Muller, Henry N., Co.

National Air Filter Co.
National Carbon Co.
National Electric Products Co.
New Departure Mfg. Co.
Nichols Lintern Co.
Norma Hoffman Bearings Corp.
Nukem Products Corp.

Ohio Electric & Controller Co.
Ohio Steel Foundry Co.
Okonite Co.

Orange Roller Bearing Co.
Otis Elevator Co.

Pennsylvania Lubricating Co.
Permutit Co.
Pittsburgh Electric Furnace Co.
Pittsburgh Electric & Machine Works
Pyle-National Co.
Pyrometer Instrument Co.
Pennsylvania Natural Gas Men's association

Reed Air Filter Co.
Reading Chain & Block Corp.
Reid, Wallace M., & Co.
Reliance Electric & Engineering Co.
Republic Flow Meters Co.
Reynolds, H. Lee, Co.
Roller-Smith Co.
Rollway Bearings Co. Inc.
Rotor Air Tool Co.
Rowan Controller Co.
Rutherford & Uptegraff

S. K. F. Industries Inc.
Smith, T. L., Co.
Square D Co.
Standard Underground Cable Co.
Stockdale, H. S., Co.
Syntron Co.
Shenango-Penn Mold Co.

Texas Co.
Thompson Electric Co.
Timken Roller Bearing Co.
Tippins & Sprengle Inc.
Tool Steel Gear & Pinion Co.
Trent, Harold E., Co.
Trumbull Electric Mfg. Co.

Union Electric Mfg Co.
United States Graphite Co.

V. V. Fittings Co.

Weaver Bros. Co.
Weber Insulations Inc.
West Penn Electric Co.
Westinghouse Electric & Mfg. Co.
Whitcomb, Geo. D., Co.
Wiegand, Edwin L., Co.
Wing, L. J., Mfg. Co.
Woodhead, Daniel, Co.

Yale & Towne Mfg. Co.

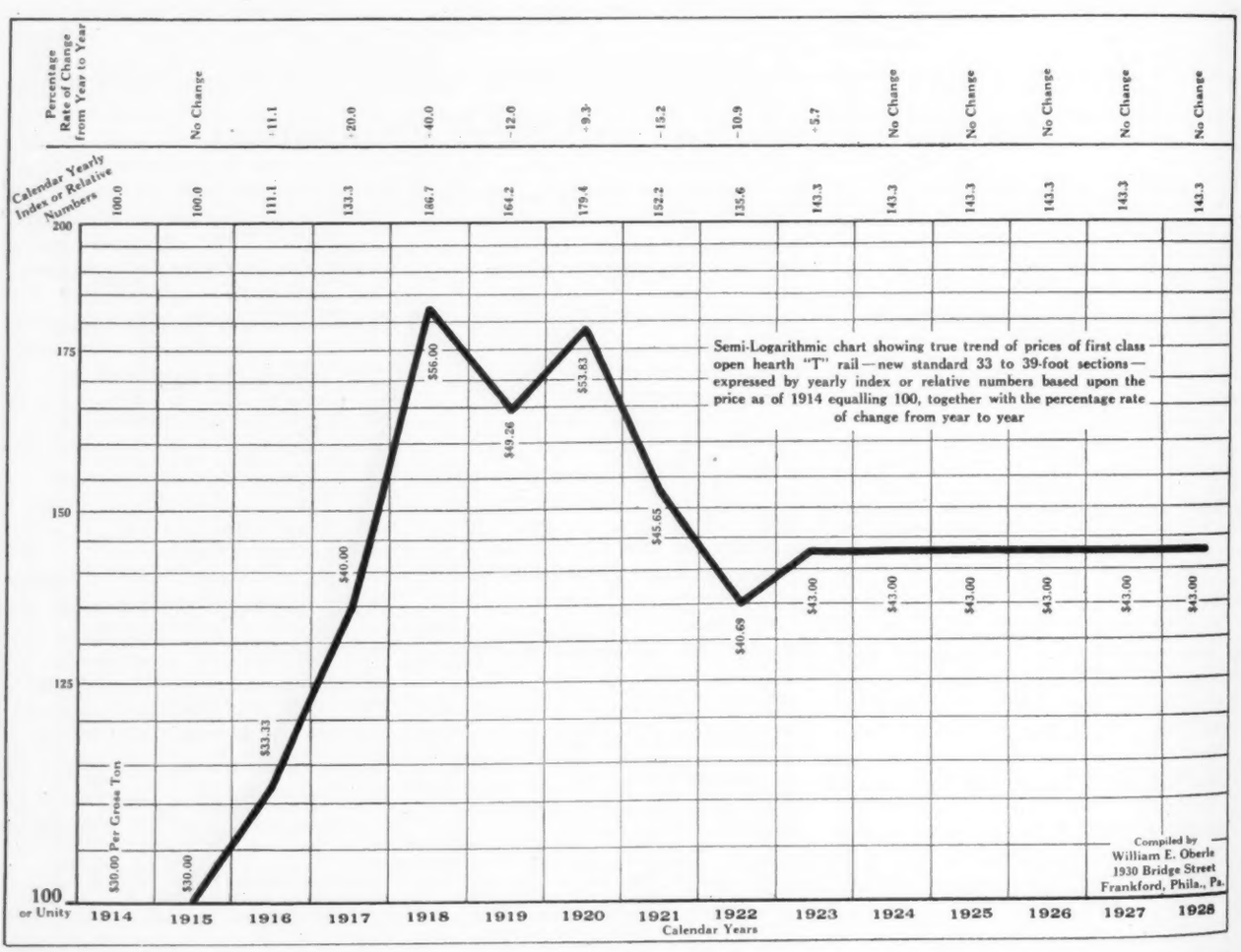
Determines True Price Trend in Open-Hearth Rails, 1914 Forward

A TRUE price trend of open-hearth T rails, in 33 to 39-foot length of any weight and section, has been developed by William E. Oberle, 1930 Bridge street, Frankford, Pa., following an analysis of weekly market quotations.

The accompanying semilogarithmic chart portrays the true rate of change for each calendar year from 1914 forward in the basic price of rails at all rail mills of the United States. Each yearly price is an arithmetic average of 52 weekly quotations f.o.b. mills. These are prices or costs only and are not in any way alligated by production tonnages. For this reason, comparison is strictly true between the years or period covered, because no distortion is introduced through varying specifications of purchasers reflected in tonnages sold by the rail mills. Further, no bias in the prices named is reflected by reason of extras under the same sort of specifications.

Everything on the accompanying chart represents T rail, any weight or rail section, but only the 33 to 39-foot lengths. Longer lengths such as 45, 60 and 66-foot, open-hearth process, about 1914 cost $1.50 per gross ton for the 45-foot and $2 per gross ton for the 60-foot more than the 33-foot lengths. In 1922 and 1923 this had risen to $2.50 per ton more and today it is $5 more per ton.

Other extras or specials such as drop tests, drilling for bonding, chemical analysis, etc., cost as follows: From 1914 up until about 1922 drop tests cost 80 cents per gross ton extra, from then until the present $1.20 per ton. Before 1911, specifications read—test pieces do not break out when nicked and tested to destruction show pipe, accept box rails as special rails. These special rails were used only in tracks of low speed and light traffic and were accepted for the purpose of avoiding an extra charge of 55 cents per ton which the steel companies claimed they would be justified in charging if the special rails were rejected. After 1911 specifications



To calculate price of second-class open-hearth rail use 5 per cent less than above prices. Bessemer process rail, first class, $2 per ton less than the above from 1914 to 1920. In 1921 only $1.61 less, and from 1922 forward the same price as open hearth. Second-class bessemer rail use 5 per cent of the first-class price

were revised to eliminate special rails, which accounts for a 55-cent extra. From 1914 onward, specifications were revised to require that all three test pieces from each open-hearth mill should pass a complete set of physical tests instead of two out of three as in previous specifications. For this additional requirement the steel companies charged 25 cents additional as compensation for the increased discard resulting. In 1915 additional specifications required all blooms should be allowed to cool to atmospheric temperature and then reheated to the proper temperature for rolling into finished rail; the steel companies charged 90 cents per ton extra for this.

Drilling for bonding from 1922 to date costs $1 for one hole in each end of web of each section and $2 for two holes in each end of the web.

Chemical analysis commencing with 1915 cost $3 per ton extra, now $8.10 is being charged. In 1915 a check chemical analysis was made of drillings taken from a piece of rail representing a mill after the rails from that mill had passed the chemical requirements in the ladle and the physical requirements in the rail. Failure of this check analysis to meet chemical requirements specified resulted in the rejection of the entire melt; for this additional requirement the steel companies demanded an increase of $3 per ton.

All of the above extras or specials if performed should be added to the basic rate shown on the chart, because in no case is any such element included therein.

Regarding girder rail as distinct from T, the basic price for 9 to 33-foot sections was $45 per gross ton in 1914. It rose to $55 in the beginning of the present period. It is now $50 per ton. These are straight rail prices; curved girder today costs about $21.25 per gross ton extra.

American Foundrymen Feted Abroad

FREEHANDED British hospitality has met the overseas delegates to the third International Foundrymen's Congress at every point in their preconvention tour northward through the midlands, the border country and into Scotland. The first day out of London, May 27, with a journey to Leamington was devoted to the points of historical interest through Warwickshire, Stratford-on-Avon, Stokes-Poges and terminating in the early evening in Birmingham where a number of the Birmingham branch of the Institute of British Foundrymen received the party of more than 60 American, German, Italian, Polish and Czecho-Slovakian travelers.

A visit to the plant of W. & T. Avery Ltd., Birmingham, during the morning of May 28 was followed by a reception and luncheon at the council house, the municipal government headquarters. The Lord Mayor of Birmingham, Alderman W. Byng Kenrick, tendered this courtesy. The Lord Mayor welcomed the delegates and S. Wells Utley, past president, American Foundrymen's association, acknowledged the courtesy of the Birmingham group.

In the afternoon the party visited the foundries of Sterling Metals Ltd., Coventry. Here sand and die-cast aluminum motor and airplane castings, gray iron and brass castings and extruded brass rods are made by the most modern methods. In the evening a dinner was given the entire party by the members of the local branch of the British Foundrymen at which the mayor of Coventry, A. J. Makepeace, delivered an address of welcome.

H. Cole Estep, vice president Penton Publishing Co., Cleveland, chairman of the committee on international relations, commended the examples of high-quality castings production on a mass basis which the traveling foundrymen had seen in Birmingham and Coventry. He stated the economic ideal of American manufacture which has found low unit costs consistent with quality and high wages through mechanization and mass production.

Inspect British Foundries

Proceeding to Derby on May 29, the party visited the plants of Rolls-Royce Ltd., Combustion Engineering Co. Ltd., and Ley's Malleable Co. Ltd. during the day. At all of these establishments foundry practice similar in many respects to that familiar to the Americans was encountered. A luncheon was tendered jointly by the three Derby companies mentioned at which the mayor spoke of Derby's part in the advancement of the castings industry. In the early history of the country Derby made more than 25 per cent of all the castings produced in England. He spoke of the growth of the Rolls-Royce organization from a company employing 500 men in 1908 to one which today has more than 4500 on its pay roll. The precision methods employed may be deduced from the fact that the output of the factory is 20 automobiles and 7 airplane motors per week. All three of the companies have American affiliation and are in close contact with American methods. S. T. Johnston, president, American Foundrymen's association, acknowledged the hospitality of the city and industries of Derby.

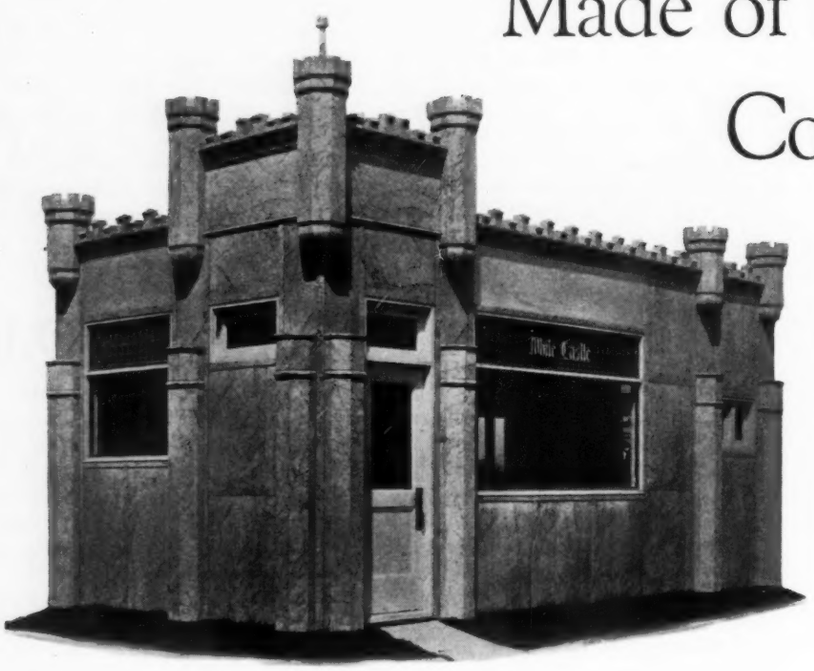
The party spent the night at Matlock, where a dinner was tendered by the East Midlands branch of the Institute of British Foundrymen. H. Pemberton, manager of the foundry, London, Midlands & Scotland railway, presided. S. H. Russell, S. Russell & Sons, Leicester, president of the British institute, spoke of the importance of the district covering Derby, Nottingham and Leicester in castings production. Derby alone has 29 foundries. Mr. Johnson responded.

Fred Erb, vice president, American Foundrymen's association, expressed the gratitude of the guests for the hospitalities accorded them. Pavel Bacher, Czecho-Slovakian representative, expressed the appreciation of the continental members for the reception.

The party spent the greater part of May 30 at the Stanton Iron Works Co., Ltd., where they inspected blast furnaces, a complete and highly efficient plant for making centrifugal cast iron pipe and miscellaneous castings, including tunnel segments for the new tunnel under the Mersey at Liverpool. The company employs over 14,000 men at its various plants, and produces pig iron for sale as well as for its own requirements. A total of 1500 tons of centrifugal pipe alone is an important output. A luncheon was given at the works at which E. J. Fox, managing director of the Stanton company, Sir Henry Fowler, director of the L. M. S. railway, S. T. Johnson and J. T. Mackenzie, American Cast Iron Pipe Co., Birmingham, Ala., spoke.

On arrival in Manchester that evening, a group of foundrymen representing the Lancashire branch and headed by E. Longdon, president of the local group, met the party at the train.

Portable, Ornamental Buildings Made of Porcelain Coated Sheets



THIS building, one of a chain of restaurants operated by a company in the Middle West, resembles marble, but is made of steel. Cleanliness, lightness and portability are some of the features claimed for it

A NEW type of portable steel building, developed for the White Castle System of eating houses, Wichita, Kans., suggests possible applications of the idea to buildings for other purposes. The White Castle is made of pressed steel sheets, porcelain enameled. No rivets are used in the supporting structure or in the inside or outside surface joints, yet the building can be knocked down and reassembled in a few days, with pliers, wrench and screw driver.

Building Cost Is Low

The entire structure illustrated, with interior fixtures, weighs about four tons. The company found it could be built for approximately one-fourth less than the cost of the glazed brick buildings formerly used. The building was designed by Lloyd W. Ray of the company's construction department, who employed a locking device that eliminated rivets and bolts and yet was hidden from view. The specifications were submitted to the Benjamin Electric Mfg. Co., Des Plaines, Ill., whose facilities were used in building, and in working out details of finish and manufacture.

Due to the fact that no dies were in existence for making the steel studding to meet the specifications the entire job had to be done from the ground up.

In Fig. 1, showing the assembled superstructure, the eight sections composing the framework are indicated by the lines on both the lower and the upper track. Each corner is a section, with an intermediate section in the front, rear, and at each end. Each section is built up by welding the studding into the upper and lower track. Only two sizes of steel studding are used.

The only wood used is a "breaker" of wood strips on the inside of the studding. This serves as an insulator between the two sheetings, eliminating actual metal contact between exterior and interior of the building, further insulating against the weather and preventing "sweating." Frames for windows, doors, and transoms are bolted in and easily removable so as to fit the needs of the ultimate location of the building.

No Rivets or Bolts Used

How the interior and exterior porcelain enameled Armco ingot iron sheets are secured without the use of rivets, bolts, or other methods commonly used in metal construction, is shown in the cross-section view of studding, Fig. 2. Exterior sheets are secured to the studding by a locking key as shown in Fig. 3. The key cover, built to fit snugly over the flanges of the key also is porcelain enameled, leaving the exterior of the building without any evidence of the manner of fastening the sheets to the framework. The interior sheets are cut so they meet at the wood strips inserted in the studding and are secured by screws directly into the wood. Joints between sheets are then covered with a nickel molding strip, also screwed into the wood. The insulation in the 4-inch space between exterior and interior walls, shown in Fig. 2, is asbestos rock wool.

Keying Method Illustrated

The assembly of all these units is shown in the cross section view, Fig. 4. How the key appears when set in place is shown in the upper left and at the corner section in this drawing. At the lower right of Fig. 4, the keyway can be seen before the key is placed. Fig. 5 shows the method of securing the movable and interchangeable framework for doors, windows, and transoms.

When completed, the building resembles a marble structure. There is no hollow or metallic ring to reveal the true nature of its construction.

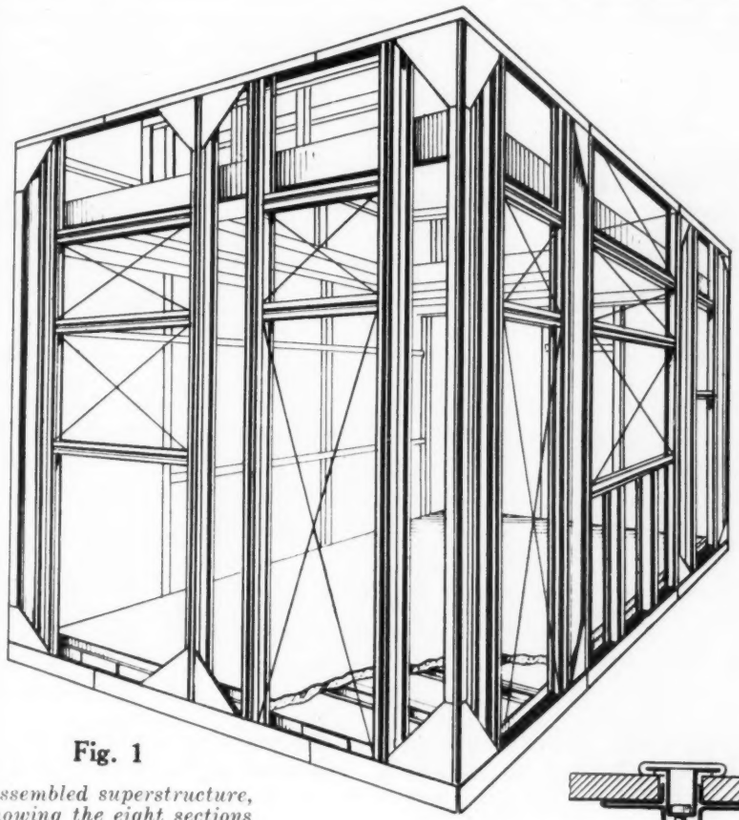


Fig. 1

Assembled superstructure, showing the eight sections composing the framework

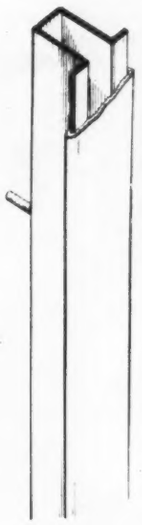


Fig. 3

Locking key which holds the exterior sheets to studding

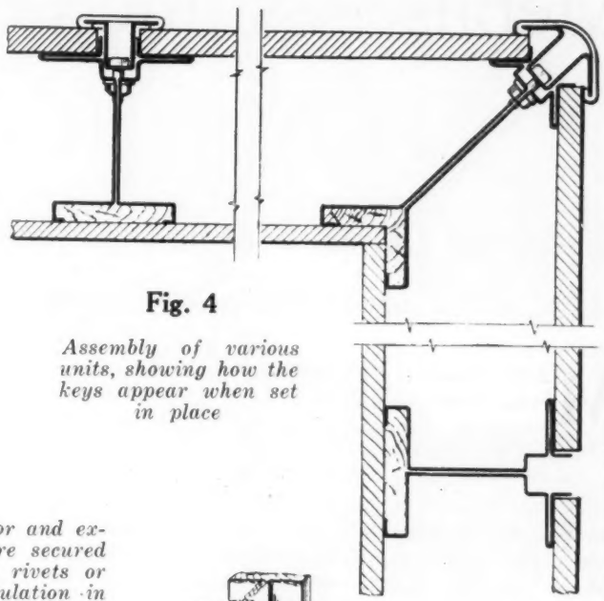


Fig. 4

Assembly of various units, showing how the keys appear when set in place

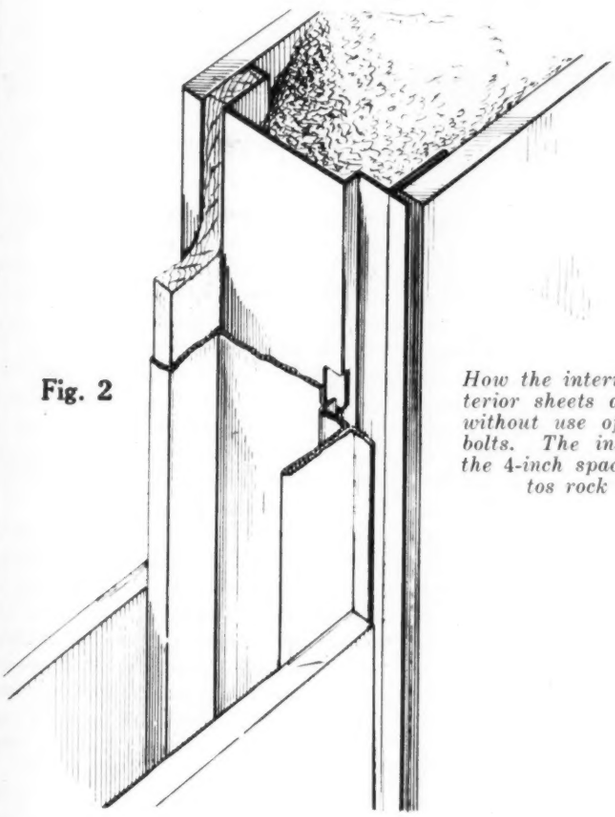


Fig. 2

How the interior and exterior sheets are secured without use of rivets or bolts. The insulation in the 4-inch space is asbestos rock wool

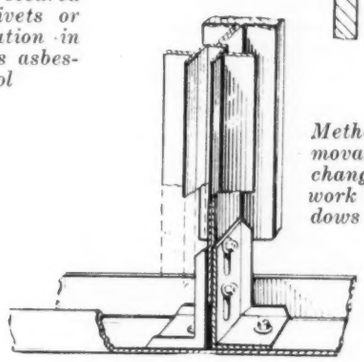


Fig. 5

Method of securing movable and interchangeable framework for doors, windows and transoms

Construction details of the building made of porcelain coated steel sheets. Little wood is used. The building can be readily taken apart and reassembled

A fleet of 12 multimotored 18-passenger transports now being built by the Boeing Airplane Co. will be put into service this summer on the San Francisco-Chicago air route, the longest regularly operated air line in the world. The flight between the Pacific Ocean and the Great Lakes will be made in approximately 20 hours

Metals Assume Greater Importance in Aircraft Construction

Nickel and Chrome-Molybdenum Steels Find Wide Use in Bar and Tubing Forms—Heat Treatment Develops Physical Properties

MAIL planes and transports wing their way daily over an extensive national network of air routes, serving business and travel interests which have definitely accepted air travel as an element in the national program of transportation and communication. Today commercial aviation ranks high in the field of American industry. The modern airplane climaxes a period of intensive development originating 25 years ago and accelerated by aircraft experience during the World war.

Wood and linen largely comprised the materials used in the fabrication of the early flying machine. At present more than a thousand basic commodities enter into the construction of an airplane, and metal is by far the most important of these materials. The quarter century period of development has been featured by the introduction and steady increase of metal as a vital element in aircraft manufacture, and today the all-metal plane is common.

Twelve years ago the Boeing Airplane Co. was organized as a small experimental shop at Seattle with only 30 employes. This company now is said to be the largest exclusive manufacturer of airplanes in the United States, is housed in a space of approximately 300,000 square feet with additional units under construction, employs more than 1400 men, and is stabilized by a background of long experience in the construction of military aircraft under the exacting requirements of the government. When the Boeing company entered the commercial field some years ago, it was able to apply the experience and training it had gained in the manufacture of military planes for the United States.

Carry Half of Air Mail

It has been estimated that Boeing planes transport approximately 50 per cent of the nation's total air mail. The Boeing System, operating the Pacific Air Transport over the 1100-mile Seattle-Los Angeles route and the Boeing Air Transport, over the 2000-mile San Francisco-Oakland-Chicago mail-passenger-express air line, carries 30 per cent of the air mail, and Boeing planes in service on other commercial air lines move another 20 per cent. The Boeing System is claimed to be the largest commercial air transport organization in the nation. Its planes fly 10,000 miles a day, 4600 of which is night flying, and recently completed the 5,000,000 miles of actual flying.

The Boeing Airplane Co. has completed a record of having designed and built more than 45 different models of military and commercial planes, including army pursuit planes; navy seaplanes; mail planes; combination mail, passenger and express planes; flying boats; 12 and 18-passenger transports; sport planes and training planes.

Following the design of a new plane or the improvement of an existing plane, a model of which is thoroughly tested in a wind tunnel, specifications for parts are compiled and transferred to the various de-

partments of the plant. A great part of the actual manufacturing is conducted in the large metal-working unit of the factory, which includes the machine shop, the heat treatment rooms, the welding and brazing department and the sheet metal section.

Requirements for tubing and bar stock are transmitted to the machine shop, which includes over 200 machinists and a complete equipment of modern mechanical equipment, such as engine and turret lathes, grinders, nibblers, milling machines, punch and drill presses, a specially constructed draw bench for drawing square, rectangular and stream-line tubing, and other necessary facilities. All parts of steel are manufactured in this department.

After the bar or tubing stock has been fashioned into the specified dimensions, it is sent into the heat treatment department for the processing required to harden and toughen the metals. This department is equipped with three electric furnaces, having heating chambers of 3, 5 and 10 feet in length, respectively. These thermostatically controlled furnaces perform most of the steel heating work, a 5-foot auxiliary gas oven is available for use in emergencies. The temperatures of the three electric furnaces are indicated constantly by automatic recording pyrometers. The alloy steel treated consists principally of nickel steel and chrome molybdenum steel which are used in structural tubing, struts landing gears, axles and similar parts.

Treated by High Temperatures

The nickel steel is subjected to a maximum temperature of 1500 degrees Fahr. and the molybdenum steel is treated to a maximum of 1625 degrees Fahr. After the parts have remained in the furnaces the required time, they are quenched in oil and become hardened. The oil in the quenching tank is circulated through a cold water tank to maintain it at room temperature. After the quenching, the parts are returned to the furnaces, where heat considerably less than maximum is applied to temper, or toughen the steel. At the completion of the drawing operation, the parts are sent to the metal inspection booth, where they are thoroughly examined, and if accepted, are ready for construction purposes.

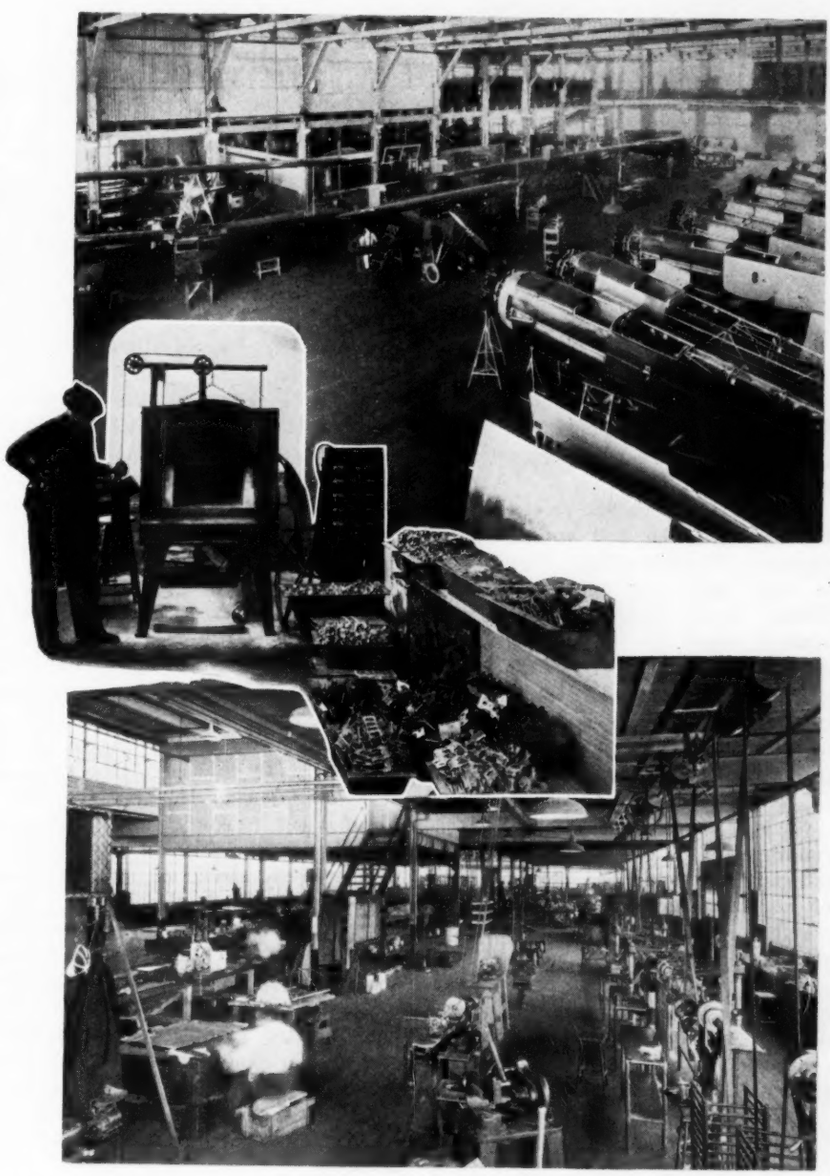
Aluminum alloys are treated in the sheet metal heat treating room. Duraluminum and alcloid are the metals generally processed here. This room includes three salt bath tanks of 5, 11 and 16 feet in respective lengths. Each bath tank is paired with a water tank of similar size for the quenching operation. The heat treating salt contains 50 per cent potassium and 50 per cent sodium nitrate, and is heated by gas. The time of heat treatment varies, depending upon the thickness of the part. A 0.0179-inch thickness, the smallest, requires 9 minutes, while a 0.2043-inch thickness, the largest, requires 28 minutes in the bath. The solution is maintained at a temperature between 940 and 950 degrees Fahr.

A test strip of the same metal is immersed with the consignment of parts, and this space is carefully tested for strength. The test for duraluminum is 56,000 pounds. It is estimated that a heat treatment of 72 hours would render the alloy as hard as steel.

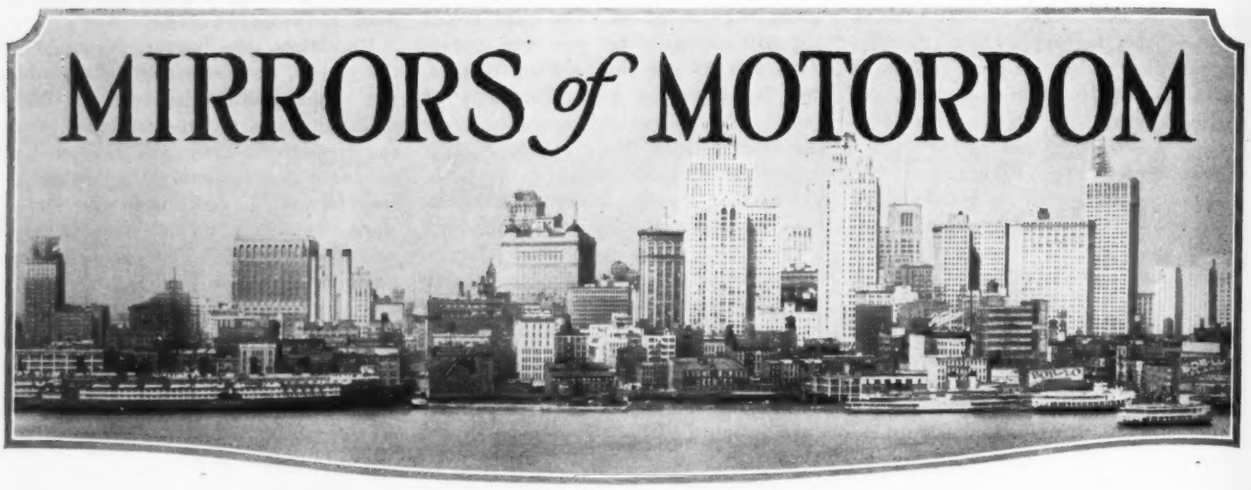
Fuselages, the metal skeletons of the planes, are assembled in the welding and brazing department. When the metal parts are received from the inspectors, they are cleaned and prepared for assembly. A metal jig, constructed to conform to the dimensions, is based on a movable level platform of steel. The parts are then assembled in this jig, and the joints are electrically welded.

The Boeing company is a pioneer in the use of electric arc welding in aircraft work. Torch welding and brazing are used extensively in some

(*Concluded on Page* 1608)



(Top)—A section of the assembly department, showing a number of mail and army pursuit planes nearing completion. (Inset in Center)—A corner of the heat treating department, showing one of the electrically-oprated furnaces for hardening steel. (Bottom)—Welding and brazing department of the Boeing Airplane Co. Here fuselages are assembled after the various parts have been received from the machine shop and heat treating departments



Ford, Chevrolet To Temper Summer Auto Decline

* * * * * * * * *

New Models Due Soon; Ford Using More Malleable

Detroit, June 11

AUTOMOTIVE production is definitely headed into the summer lull. Excepting Ford, Chevrolet and Buick of the large-scale producers, all assembly schedules in this district have been curtailed. Some parts makers are off 30 per cent from a month ago.

Thus far the iron and steel industry has not felt the full force of this change. Shipments into this district in June will show only a moderate decline from May. It is releases against orders for July delivery that reflect the trend. It is taken for granted here that a let-down was inevitable, and there is some resentment against speculation, especially in the East, that a reaction comparable to recent record production impends.

So long as Ford and Chevrolet, accounting for 50 to 60 per cent of all automobile production, develop little or no shrinkage, no great decline is possible. And there are no signs that these interests, over the next 60 days at least, will taper sharply. Whatever slack comes in passenger car demand is likely to be unnoticed in continued heavy sales of light delivery cars, which are no small factor now.

* * *

THE "best minds" of the steel selling group in Detroit believe there is a rather stable market for the lowest-priced cars, which also are the large producing ones. Since the war the financial position of the so-called laboring class has steadily improved, and Detroit can see no impending contraction in purchasing power in this direction. The replacement market for Model T Fords in rural districts appears scarcely tapped yet.

Likewise for cars selling at $1500 and up the market, while smaller, nevertheless is believed to be fairly steady. Between these two strata are the medium price cars, purchased in large measure by those graduating from the lowest-price level. Here, it is believed, will come the pinch if any does develop later in the year. Production in this stratum has been heavy this year, but if the contiguous ones hold at least fairly well, a normal last half seems assured.

Steel industry representatives here are little disturbed. They have shipped a record tonnage thus far in 1929. All of it has been worked up, and with the possible exception of one automotive interest, stocks of cars are not above normal for the season. Declines in earnings of the automobile industry are traceable largely to increased value, in the way of equipment, passed along to buyers. This has connoted greater consumption of steel. Shrinkage in quotations on automotive stocks has not affected the ability of the industry to discount its bills for steel, and there are no bad accounts.

* * *

ONE day late last week Ford assembled 7353 cars and trucks in all domestic plants, 363 at Walkerville, Ont., and 621 at other foreign branches. This is a daily total of 8337 units. For one thing, on account of labor difficulties in Australia, Canadian production for export has tapered sharply. Ford is said to be aiming at 7900 daily at domestic plants in June. In May, Ford assembled at these plants 175,207 units, against 161,796 in April. As of May 14, the latest date for which this figure is available, Ford was employing 186,524 at Detroit and United States branches.

Chevrolet's daily rate is 6300 to 6500. Its May output was 160,895, compared with 140,775 in May, 1928. In five months of 1929 it has assembled 672,732 units, against 618,791 one year ago.

The current Oakland-Pontiac schedule is 200 of the former and 1200 of the latter. Willys-Overland is at a 1300 rate. Hudson-Essex totals about 1100. Buick, stimulated by the new Marquette, has stepped up its schedule from about 500 in May to about 800 this month.

Chrysler is averaging about 2300 units daily, divided as follows: Plymouth 900 to 1000, Dodge 675, Chrysler 200, De Soto 250, trucks 200. Packard and Reo each are averaging about 200 daily.

* * *

AS a steelmaker, Ford is steadily improving its position. The current daily rate of open-hearth steel production is 1300 to 1400 tons. Because there are only two pouring stations—and all pouring is done double—two or three of the ten 100-

ton open hearths are in enforced idleness. In 90 days a new stripping building will be completed; this will permit ingot molds to be made up in the present stripping building, and a third pouring station will be set up in the space now devoted to make-up. Then steelmaking will be limited only by mechanical difficulties and repairs.

* * *

FORD is now concentrating its steelmaking activities on alloy steel. All of the special steel required for springs, bumpers, gear stock and other important parts is of Ford's own make. For the forging of such parts as crankshafts in outside plants the billets are shipped from Fordson.

In Ford practice 0.03 is the maximum for phosphorus, and 0.02 and less is usual. In one heat for pinion gear stock over $1000 worth of vanadium was used recently. For spring stock, carbon runs 0.48 to 0.52, manganese 0.80 to 0.95, and chrome 1.00 to 1.20.

Ship scrap to the extent of about 200 tons is charged daily into the open hearths, and at this rate it will be 2 years before the accumulation at Fordson from the wartime ship scrapping operations is exhausted.

* * *

ONE of the outstanding steel forged and welded units on the Ford model A—the rear axle housing—is bowing to malleable iron. Already a good proportion of housings on current production are malleable, and it is believed a complete shift will be made ultimately.

With the steel forged and welded housing no fault has developed. But the facilities for making an adequate number are lacking, and at a somewhat lower cost a malleable housing of ample strength and identical appearance can be turned out. The malleable housing weighs about 13 pounds, and since no malleable is poured at Fordson, outside foundries benefit by 48 to 50 tons daily.

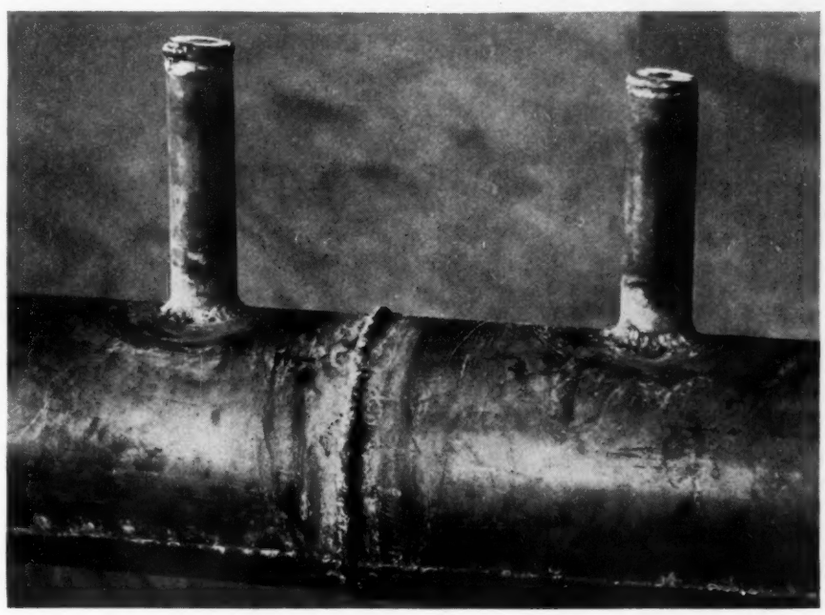
* * *

CHRYSLER is understood to be swinging into production soon on new models for its Chrysler line—each of the three to have distinctive bodies. Four speeds forward are reported among the mechanical changes. Hud-effecting some changes. The new Buick, it is rumored, will come out son, Hupmobile and Packard also are with some of this year's body bulge deflated. A new Ford design of wire wheels will feature large hub caps.

* * *

WHILE there is less open discussion of water shipment of steel this year, the tonnage is increasing. Ford has been having considerable steel, chiefly bars, delivered from Youngstown and Cleveland to its dock at Cleveland. Two cargoes of sheet bars have arrived from Chicago for the Michigan Steel Corp., which also draws heavily upon water shipments from Cleveland. Bars have been coming from Buffalo to Detroit, and alloy steel from Chicago to Detroit and Toledo. Structural shapes are scheduled from Chicago shortly.

Simple Precautions Necessary to Weld Monel Metal Successfully



Welded monel header employed in chemical plant operation

MONEL metal is an alloy of nickel and copper containing about 67 per cent nickel, 28 per cent copper and 5 per cent of other elements such as iron, manganese, silicon and carbon. When new, it resembles untarnished nickel. Probably the most valuable property is its resistance to corrosion.

In welding this metal a few simple precautions must be observed. First, a neutral flame should be used. The tip should be one or two sizes larger than would be required for steel of the same thickness. Cold-drawn monel metal wire or strips cut from sheet, should be used as the welding rod. The oxide film that forms on the surface of the puddle helps to protect the metal underneath from further oxidation. Keeping the outer envelope of the flame spread over the weld area will also aid in excluding air. The rod should be melted under this skin of oxide and slag. Any particles of dirt or foreign matter should be worked up into the slag by melting underneath them. Then, when the weld is built up well above the surface, as all welds of this metal should be, grinding will remove all oxide, slag and impurities.

Monel metal castings present a peculiar combination of properties. Like gray iron castings, they are sensitive to sudden temperature changes while under the welding flame. Consequently, in welding such castings they must be carefully preheated, welded while hot and allowed to cool slowly. Like cast aluminum, these castings have little strength when hot, thus the piece must be supported properly in the preheating furnace in order that the various parts of the casting do not collapse or distort under their own weight. The casting should be brought to an even dull red heat of about 1200 degrees Fahr. and the temperature maintained steady during the welding.

When the weld is completed all openings of the preheating furnace should be covered with asbestos paper, the draft holes closed with sand and the casting allowed to cool gradually in the dying fire. The casting must not be uncovered until it is stone cold.

Steel Corp. Hits Bethlehem Claims

Reply in Suit Alleging Infringement on Structural Mill Patents Declares Time For Bringing Action Has Passed

FURTHER answer has been filed by the United States Steel Corp. and its subsidiaries, the Carnegie Steel Co. and the American Bridge Co., to the suit of the Bethlehem Steel Co. over alleged infringement of patents in the production of special structural steel sections. The reply asserts there has been no infringement on the Grey mill patents and generally deny the validity of the action, including the right of the Bethlehem company to sue. The answer follows:

United States District Court
DISTRICT OF NEW JERSEY
BETHLEHEM STEEL CO.,
Plaintiff,

v.

UNITED STATES STEEL CORP., CARNEGIE STEEL CO. and AMERICAN BRIDGE CO.,
Defendants.
In Equity No. 3814

ANSWER

To the Honorable Judges of the United States District Court for the District of New Jersey:

The defendants in the above entitled cause, answering say:

I. Defendants are not informed of the facts concerning the incorporation of plaintiff and therefore leave plaintiff to its proof thereof.

II. Defendants admit that they are corporations organized and existing as stated in the first paragraph of the complaint.

III. Defendants admit the issue of Letters Patent of the United States No. 1,495,570 on May 27, 1924 to George H. Blakeley for alleged Series of I-Beams as alleged in the third paragraph of the complaint, but deny all the other allegations of said paragraph, and leave plaintiff to its proof.

IV. Defendants are not informed save by the bill of complaint of the assignment referred to in the fourth paragraph thereof and leave plaintiff to its proof.

V. Defendants deny that the alleged invention patented as aforesaid is of great commercial value or of any value. As to the use thereof by plaintiff, Bethlehem Steel Co., defendants are not informed save by the bill of complaint, and therefore leave plaintiff to its proof. Defendants deny that the public in general has acquiesced in the validity of said Letters Patent or has recognized the right of plaintiff thereunder, and deny infringement.

VI. Defendants admit that defendant, United States Steel Corp., is the owner of all the capital stock of the two defendants, Carnegie Steel Co. and American Bridge Co.

VII. Defendants are not informed save by the bill of complaint of the success and value of the business of the plaintiff. Defendants deny any exclusive rights in the plaintiff by virtue of the patent aforesaid. Defendants deny that they have joined and contrived together to use the invention embodied in the said Letters Patents and deny that they have joined and contrived together in the making and selling of metal beams and bars.

VIII. Defendants admit that Carnegie Steel Co. has constructed at Homestead, Pa., mills designed for making beams and has made and sold such beams, that American Bridge Co. has fabricated and sold the same beams, but deny that such mills or their operation or beams so made and sold have been in infringement of any patent rights of plaintiff. Defendants admit that the aforesaid acts of Carnegie Steel Co. and American Bridge Co. have been taken pursuant to the control and direction of United States Steel Corp. and that United States Steel Corp. at the time of the building of said mills and the making and selling of said beams was controlling and is now controlling all of the rights and property of Carnegie Steel Co. and American Bridge Co. and the operation and conduct of said mills and business.

IX. Defendants deny that United States Steel Corp., Carnegie Steel Co. and American Bridge Co. have joined together or have acted in conjunction as alleged in the ninth paragraph of the complaint and deny that they have infringed the Letters Patent referred to in said paragraph and deny that they threaten such infringement. Defendants deny that Carnegie Steel Co. has produced and sold beams or bars embodying the patented invention set forth in the aforesaid Letters Patent. Defendants deny that American Bridge Co. has sold beams or bars infringing the aforesaid Letters Patent.

X. Defendants deny that United States Steel Corp. has committed any act of infringement of the aforesaid Letters Patent, deny that it has authorized, directed and controlled any such infringement or is now authorizing or controlling any such infringement, deny that it has authorized, directed and controlled or is authorizing, directing or controlling any infringing acts of Carnegie Steel Co. and American Bridge Co. or is participating in the profits resulting from such infringement.

XI. Defendants deny that Carnegie Steel Co. has manufactured and sold either directly or through American Bridge Co. or is now so manufacturing and selling any beams or bars in infringement of said patent under the direction of United States Steel Corp. or otherwise, or has participated in profits resulting from the manufacture, sale and use of any beams or bars in infringement of said patent.

XII. Defendants deny that American Bridge Co. has fabricated and sold any beams or bars manufactured by Carnegie Steel Co. in infringement of said patent or is fabricating and selling any such beams or bars manufactured by Carnegie Steel Co. under the direction of United States Steel Corp. or otherwise or has participated in the profits resulting from the manufacture, sale and use of any infringing beams or bars.

XIII. Defendants admit that they have been notified of the claims of plaintiff under the aforesaid patent but deny due notice of the alleged infringement and deny that they have infringed said patent since said notice and that they or any one of them have profited and that plaintiff has been damaged by any infringement.

And in further defense as to said Letters Patent defendants aver as follows:

XIV. Defendants aver that plaintiff by reason of its long delay in bringing this suit with full knowledge of the acts of defendants complained of have been guilty of laches and have abandoned any right of action which they otherwise might have had for infringement of the said Letters Patent.

XV. Defendants aver that patentee George H. Blakeley is not the original, first and sole inventor of the alleged improvements claimed in said Letters Patent and that said Letters Patent are therefore void.

XVI. Defendants aver that in view of the state of the art existing at the date of the alleged invention of the Letters Patent sued on, the alleged improvement did not constitute patentable invention and that said Letters Patent is therefore void.

XVII. Defendants aver that said Letters Patent are void for the reason that the alleged improvements therein claimed were invented by and known to others and in public use and on sale prior to the alleged invention thereof by Blakeley and more than two years prior to the filing of application for said Letters Patent, such invention, knowledge and prior use and sale being by the following named persons and concerns at the

following named places, namely:

Levi D. York	Duluth
James E. York	Duluth
William A. Dunn	Duluth
Henry Grey	Duluth
George W. Burrell	Cleveland
Samuel T. Wellman	Cleveland
Bethlehem Steel Co.	Bethlehem, Pa.
George H. Blakeley	Bethlehem, Pa.
George E. Thackray	Bethlehem, Pa.
Frank Bynam	Bethlehem, Pa.
Robert A. Marble	Ben Avon, Pa.

United States Letters Patent

Grey	587,958	Aug. 10, 1897
Prescott	606,474	June 28, 1898
Dunn	709,081	Sept. 16, 1902
Grey	758,527	April 26, 1904
Sack	939,168	Nov. 2, 1909
Grey	993,342	May 23, 1911

Foreign Patents

French patent	Grey 285,619	1899
French patent	Grey 323,369	July 7, 1902
British patent	Amer. 15,805	July 15, 1902

Universal Mill Co.

German patent	Grey 107,124	
German patent	Grey 162,714	
Gewerkschaft Deutscher.....	235,296	June 12, 1911

Kaiser Hamborn

Publications

The Iron Age, published at New York by David Williams Co., 232 Williams Street, New York, June 17th, 1897, page 14, article by H. Grey, entitled "A New Form of Structural Steel," referring to Iron Structural Steel Co., Duluth.

Engineering News, published by The Engineering News Publishing Co., at New York City, November 21st, 1901, page 387, article on Grey Mill at Differdange, Luxemburg, Germany, entitled "A New Process for Rolling Structural Steel Shapes."

The Iron Age, published at New York by David Williams Co., 232 Williams Street, New York, November 1st, 1906, page 1144.

Bethlehem Steel Co. handbook entitled "Structural Steel," 1907, published by Bethlehem Steel Co., Bethlehem, Pa.

Bethlehem Steel Co. handbook entitled "Structural Shapes," May, 1909, published by Bethlehem Steel Co., Bethlehem, Pa.

Bethlehem Steel Co. handbook entitled "Structural Shapes," January, 1911, published by Bethlehem Steel Co.

XVIII. Defendants aver as to said Letters Patent that it is void because the alleged improvement therein claimed was, prior to the alleged invention thereof by George H. Blakeley or more than two years prior to the filing of the application for said Letters Patent, patented and described in the following Letters Patent and printed publications, namely:

XIX. Said patent in suit is void for indefiniteness and ambiguity of the claims.

XX. Said patent in suit is void for the reason that beams claimed therein were in common knowledge and use prior to the alleged invention thereof by Blakeley and more than two years prior to the filing date of the patent application.

WHEREFORE defendants pray to be hence dismissed with their costs in this behalf sustained.

LINDABURY, DEPUE & FAULKS,
Solicitors for Defendants.

D. ANTHONY USINA,
MELVILLE CHURCH,
NATHAN L. MILLER,
Counsels for Defendants.

Blaw-Knox Earnings High

The Blaw-Knox Co., Pittsburgh, reports for the first four months net earnings, after taxes, of $622,448, compared with $425,345 the corresponding period of last year. These earnings include only operations of the Blaw-Knox Co. and do not reflect earnings of subsidiary companies, carried on Blaw-Knox books as investments. Profits of subsidiary companies are obtained by Blaw-Knox only through dividends paid.

Unfilled orders May 1 were the largest in history.

Trade Practice Standards Are Adopted by Gray Iron Institute

ADOPTION of standard sales agreement and trade customs in the gray iron industry has been announced by the Gray Iron institute, Cleveland. Directors of the organization approved the trade practice standards as formulated by the merchandising committee.

The standard sales agreement and trade customs follow:

STANDARD SALES AGREEMENT

All quotations are made and all castings are sold upon the following terms and conditions:

1. Unless otherwise agreed, quotations must be accepted and patterns furnished the foundry within thirty (30) days from date of quotation.

2. All castings are sold as rough castings, f.o.b. cars, foundry point. Terms—thirty (30) days net, from invoice date, unless otherwise stated.

3. Claims for error in weight or number must be made within five (5) days after the receipt of castings

4. Foundry is responsible only to the extent of replacing castings rejected due to foundry defects and such castings must be reported or returned to the maker within ninety (90) days after their receipt.

5. Foundry is not responsible for machine work, labor charges or other losses or damages caused by defective castings.

6. Foundry is not responsible for loss of or damage to patterns by fire or other casualties beyond its control.

7. Foundry shall not be liable in damages for failure to deliver as a result of fires, strikes, differences with employes, accidents or other causes beyond its control.

TRADE CUSTOMS

Our purpose in setting forth these trade customs is to establish between customer and foundry a complete understanding of those conditions peculiar to the gray iron foundry business. They are not presented as a "Code of Ethics" for we believe general business ethics are so well established and understood that further elaboration is not necessary. Frequently, honest differences of opinion arise, and it is hoped that a pamphlet of this kind outlining the generally accepted customs will serve as a basis of settlement between customer and supplier in these cases.

QUOTATIONS

1. Blue prints submitted for estimating purposes should be marked with rough casting weight, if known, or an estimated weight upon which quotation will be based. A detailed description of the pattern equipment should be furnished.

2. When quotations involve the making of piece prices, definite weights shall be established and agreed upon, and quotations shall be subject to revision on any variation from the established weights.

3. Unless otherwise specified by the foundry, quotations are based on castings with gates, fins and other projections removed to approximately the contour of the pattern.

ORDERS

4. No order shall be changed unless notice of revision is made and accepted in writing before work is in process. If work is in process, customer is to be charged for any castings made as well as cost of cores, molds or equipment discarded because of such changes.

5. Cancellations of orders are to be made only by mutual consent of buyer and seller.

6. Unless otherwise stipulated, the customer shall accept an overrun of ten per cent above quantities specified on order. However, the foundry is to make an effort at all times to furnish as near the exact quantity specified as operating conditions will permit.

7. If customer requires special production service to secure unusual deliveries, an extra charge shall be made.

PATTERNS AND CORE BOX EQUIPMENT

8. Customer must supply equipment in condition to produce economically the quality and quantity of castings required.

9. An extra charge will be made if patterns require stopping off or if skeleton or sweep pattern equipment is furnished.

10. Foundry is not responsible for variations existing between blue prints and equipment supplied by customer.

11. All patterns, core boxes and loose pieces thereof, should be marked properly for identification.

12. Follow boards, core driers and similar devices when required, are to be furnished by customer.

13. Repairs and changes to patterns by customer's orders will be made at expense of customer.

14. All freight, drayage, boxing and crating charges of patterns, both to and from the foundry, shall be assumed by customer.

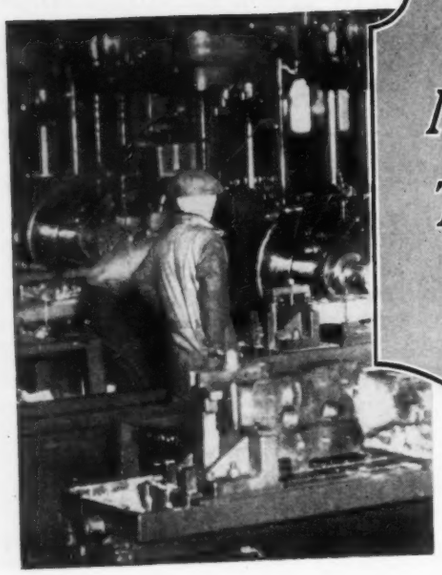
15. Pattern storage facilities are provided by foundry for active patterns only. Patterns not in use for a period of six (6) months will be returned to the owner or will be subject to storage charges.

* * *

To insure the elimination of error, the following recommendations, agreed to by other outstanding organizations of the foundry trade, are made.

Patterns are to be painted the following standard colors:

Unfinished surfaces—black.
Machined surfaces—red.
Seats of and for loose pieces—red stripes on yellow background.
Core prints and loose core print seats—yellow.
Stop-offs—diagonal black stripes on yellow base.



New Machine Tools and Shop Equipment

"Without tools man is nothing, with tools he is all."—Carlyle

Glare Is Eliminated in Switchboard Glasses

No. 121

General Electric Co., Schenectady, N. Y., has introduced a line of switchboard instruments with special glass to prevent glare. This feature combined with anti-parallax scale and pointer, facilitates reading regardless of angle from which the instrument ic viewed. The new instruments with dimensions of 6 x 5½ x 3½ inches, are uniform in size and appearance for both alternating-current and direct-current ammeters, voltmeters, wattmeters, reactive volt-ampere meters, power-factor meters, and frequency meters. They are back-connected, and equipped with mounting studs to support the instrument on the switchboard. The wattmeters for voltages in excess of 140 are supplied with external resistors. Others have the resistors enclosed in the cases. Both alternating-current and direct-current instruments have electromagnetic damping.

No. 122—Paint spraying outfit

Paint Spraying Unit Is Light and Compact

No. 122

DeVilbiss Co., 3748 Detroit avenue, Toledo, O., recently has placed on the market a small, compact, electrically operated paint spraying unit, consisting, as shown in the accompanying illustration, of electric motor, air compressor and atomizer. The device operates on current from the ordinary light socket and delivers a finely

Iron Trade Review's Calendar of New Equipment

Item	Comment	Builder	No.	Date Described	Page
Milling machine	Double-spindle type with opposed feed	Kent-Owens Machine Co.	97	May 2	1193
Cranes	Locomotive cranes with center-drive superstructures	Thew Shovel Co.	98	May 2	1193
Locomotives	Industrial type; gasoline powered and gear driven	Cincinnati Car Corp.	99	May 2	1193
Switch	Combines magnetic and circuit switches and fuses	General Electric Co.	100	May 2	1194
Lathe	Larger model of single-spindle automatic unit	Jones & Lamson Machine Co.	101	May 2	1194
Motor	Fan-cooled and totally-enclosed; uses direct current	Westinghouse Electric & Mfg. Co.	102	May 2	1194
Drawing oven	750 degree range; fan in heating chamber	General Electric Co.	103	May 9	1268
Slip roll former	For forming sheets; 3-inch diameter capacity	Niagara Machine & Tool Works	104	May 9	1269
Locomotive crane	Gasoline powered; 3-speed automotive gear shift	American Hoist & Derrick Co.	105	May 9	1269
Enclosing case	Cast iron and welded types; for across-the-line starters	Cutler-Hammer Inc.	106	May 30	1472
Melting pot	Electric heating units; bottom pouring spout	General Electric Co.	107	May 30	1472
Water level indicator	Extension system facilitating location of indicator	Combustion Engineering Corp.	108	May 30	1473
Polishing machine	Motor mounted in base; texrope drive	Hisey-Wolf Machine Co.	109	May 30	1473
Contactor	For motor starters; adds to safety by smothering arc	Westinghouse Electric & Mfg. Co.	110	May 30	1473
Speed change gears	For vertical turret lathes; provides higher speeds	Bullard Co.	111	June 6	1535
Sand conditioner	Aerates and cools foundry sand for storage	Beardsley & Piper Co.	112	June 6	1535
Cut-off saw	High-speed; automatic power stock feed	Cochrane-Bly Co.	113	June 6	1535
Stocker drive	Electric motor and gear reduction	Combustion Engineering Corp.	114	June 6	1535
Gasoline engine	Portable type in small horsepowers	Fairbanks, Morse & Co.	115	June 6	1536
Hand nibbler	Cuts drill rods, performs nibbling and shearing	National Machine Tool Co.	116	June 6	1536
Band saw	High-speed type for patternmaking	Oliver Machinery Co.	117	June 6	1536
Welding generator	Double-arc type; flexible control a feature	Electric Arc Cutting & Welding Co.	118	June 6	1536
Milling machines	Standard and universal types for heavy work	Brown & Sharpe Mfg. Co.	119	June 6	1536
Safety starter	Across-the-line type, featuring remote control	Lincoln Electric Co.	120	June 6	1537
Switchboard instruments	Special glass minimizes glare; anti-parallax scale	General Electric Co.	121	June 13	1576
Paint sprayer	Operates on current from light socket; light weight	DeVilbiss Co.	122	June 13	1576
Milling machine	Rough mills gear and pinion teeth on production basis	Kearney & Trecker Corp.	123	June 13	1577
Spot welder	Applicable to welding of light sheet metal parts	Thomson Electric Welding Co.	124	June 13	1577

atomized spray adjustable from a round spray to a fan spray 3½ inches in width. The entire outfit weighs 47½ pounds. Constant pressure and ample air supply are claimed for the device by its manufacturer.

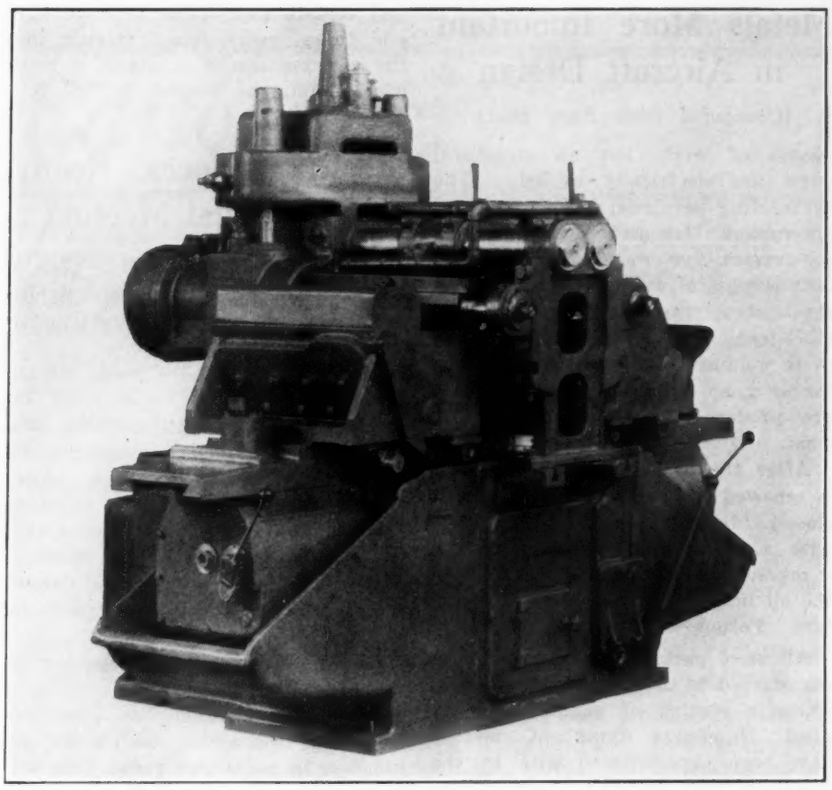
Milling Machine Built for High Production

No. 123

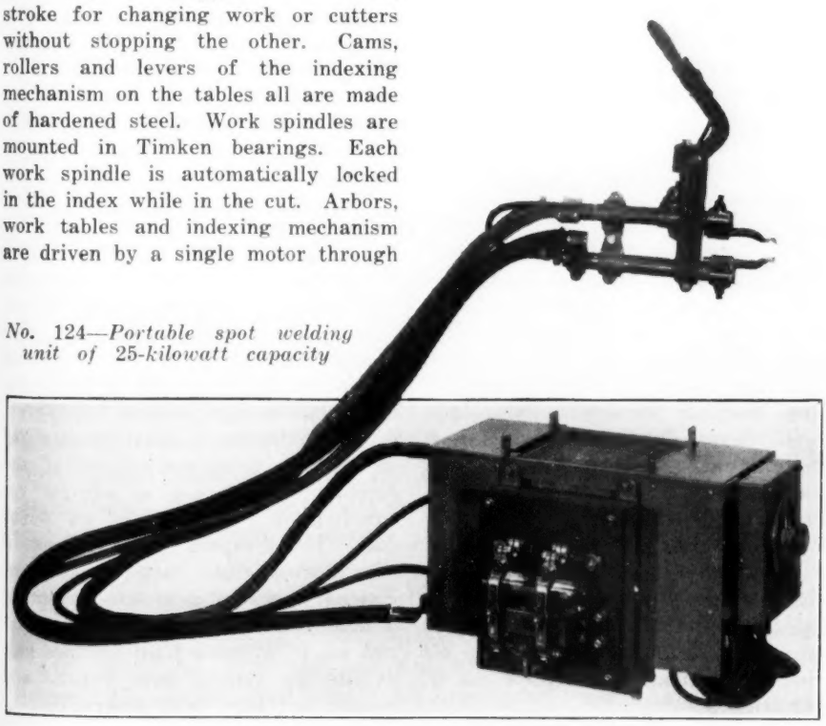
Kearney & Trecker Corp., Milwaukee, recently has built a special type of milling machine which has several unusual features of design and construction. The machine, a general view of which is shown in the accompanying illustration, was developed for rough milling the teeth in differential gears and pinions for farm tractors on a quantity production basis, having a capacity of 18 gears and 40 pinions an hour. Three high carbon 28-tooth gears and four 14-tooth pinions are milled simultaneously. The entire operation, with the exception of loading the indexing spindles, is automatic.

The machine is equipped with a two-spindle head and two opposed, independently controlled cam operated tables. Each table carries an automatic indexing fixture, one having three spindles for the gears and the other four for the pinions. There are two cutter arbors, one on the gear side carrying three bevel gear roughing cutters, and one on the pinion side four similar cutters. Arbor spindles are mounted in Timken bearings.

The tables are independently controlled by drum cams so that one side may be stopped at the out stroke for changing work or cutters without stopping the other. Cams, rollers and levers of the indexing mechanism on the tables all are made of hardened steel. Work spindles are mounted in Timken bearings. Each work spindle is automatically locked in the index while in the cut. Arbors, work tables and indexing mechanism are driven by a single motor through a series of horizontal and vertical gear reduction units. The work is completely enclosed while in the cut by a system of removable guards of welded sheet steel construction. Coolant for the cutters is supplied under pressure from manifolds over the tables and drains to a sump located in the base of the machine.



No. 123—Machine for rough milling differential gear and pinion teeth



No. 124—Portable spot welding unit of 25-kilowatt capacity

Announces Portable Spot Welding Machine

No. 124

Thomson Electric Welding Co., Lynn, Mass., announces the development of a new 25-kilowatt portable spot welder. The unit consists of a 25-kilowatt transformer on which is mounted a magnetic wall switch and also a five-point regulator switch which is connected to the tapped primary coil of the transformer for obtaining variation in welding voltage and current for different thicknesses of material. The welder is supplied mounted on casters or small wheels and also is provided with four ears, as shown in the accompanying illustration, to permit its being suspended from overhead if so desired. To the cast water-cooled terminals of the secondary are attached large flexible cables which terminate in a pair of hand operated pliers. The design of these pliers is such that various shaped welding electrodes may be attached or removed quickly. Pressure on the welding points is obtained through a hand lever operating rack and pinion. Control is through a pushbutton switch mounted on the plier lever and connected to the operating coil of the magnetic wall switch. The unit is said to be particularly applicable to welding of light sheet metal parts such as automobile body parts, etc.

Metals More Important in Aircraft Design

(*Concluded from Page* 1601)

phases of work, but all structural parts are electrically welded. The engineering personnel has developed a low-voltage, low-amperage, alternating-current arc welder, which permits successful welding of tubing and sheet stock ranging from 0.035 to 0.375-inch in thickness. Three of these welding sets are in constant use, for as many as two all-steel fuselages are produced daily in this department.

After the fuselage is completed, it is removed from the jig and inspected closely. It is then thoroughly oiled with a compressed air oiler exerting a pressure of 10 pounds, which forces the oil into every recess of the structure. Porous welds thus are exposed.

All steel parts of the airplane are transferred to the plating department, where a plating of cadmium is applied. Numerous types of plating have been experimented with by the engineers, but cadmium plating was found to be by far the most resistant to corrosion. A part coated with cadmium has been subjected to 1000 hours in a salt spray, after which no trace of corrosion could be discovered.

Following plating, the steel parts are transferred to the enameling department, where, with other metal parts, they are sprayed with enamels in the two large spraying booths and then baked to hardness in baking ovens. Completed parts are then transferred to the assembly room, where they go into the finished plane.

Some Wood Still Used

Metal has not entirely displaced wood in aircraft construction, and the wood-working department of the company is charged with the construction of flying boat hulls and pontoons, interior finishing, wing spars, templets, models and other parts. A carload of spruce is used every month by the plant, although mahogany, ash, birch, walnut, maple and fir also are used for construction purposes.

Perhaps the largest of all the equipment in the factory is the giant 700-ton hydraulic press in the sheet metal department used for pressing wing and tail surfaces, stabilizer covers, cowling, seats and flooring and other sheet-metal parts. Pressure is furnished by the Seattle water supply supplemented with an auxiliary electric pump.

The Boeing plant is rather completely self-contained, and with the exception of engines and instruments, and certain accessories such as tires and tubes, every item entering into the construction of a plane is manufactured in the plant.

Steel Engineers Ready for Annual Meeting

(*Concluded from Page* 1595)

partment and the seamless and welded tube departments of the Aliquippa works.

Social events for the week include a luncheon Monday noon and informal reception with dancing and entertainment Monday evening. An engineering breakfast and ladies bridge luncheon are on the calendar for Tuesday with a sightseeing trip for lady guests planned for Wednesday. On Thursday evening a formal reception and dinner dance will be held.

In connection with the opening of the exposition on Monday evening a special demonstration has been arranged of controlling an electric locomotive by voice over radio. This will be in the main lobby of the hotel and under the supervision of C. S. Proudfoot, president of the association.

New officers will be elected for the coming year to succeed present executives who are as follows: President, C. S. Proudfoot, Vanadium Corp. of America, Niagara Falls, N. Y.; first vice president, F. W. Cramer, Republic Iron & Steel Co., Youngstown, O.; second vice president, R. M. Hussey, Jones & Laughlin Steel Corp., Aliquippa, Pa.; treasurer, James Farrington, Wheeling Steel Corp., Steubenville, O.; secretary, A. A. Stewart, Pittsburgh Steel Co., Monessen, Pa. John F. Kelly, Empire building, Pittsburgh, is managing director of the association.

Directors of the association are: A. J. Standing, Bethlehem Steel Co., Bethlehem, Pa.; S. S. Wales, Carnegie Steel Co., Pittsburgh; Karl L. Landgrebe, Tennessee Coal, Iron & Railroad Co., Ensley, Ala.; M. J. Conway, Lukens Steel Co., Coatesville, Pa.; E. F. Blank, Jones & Laughlin Steel Corp., Pittsburgh; I. N. Tull, Corrigan-McKinney Steel Co., Cleveland; E. L. Upp, National Tube Co., Gary, Ind.; J. E. Sayer, Tennessee Coal Iron & Railroad Co., Ensley Ala.; P. T. Vanderwaart, New Jersey Zinc Co., Palmerton, Pa.; and E. Friedlaender, Pittsburgh.

Midwest Steel & Iron Works, Pueblo, Colo., is operating at 80 per cent of capacity. It is adding a crane, air compressor, angle and plate shear, and friction saw.

Blast Furnace Operators Meet in Pittsburgh

Utilization of blast furnace gas in the heating of coke ovens and steel plant furnaces was the principal subject for discussion at the annual meeting of the Eastern States Blast Furnace & Coke Oven association, held at the St. Clair Country club, Pittsburgh, June 7. The technical portion of the meeting consisted of two talks which followed a short business session at the conclusion of the dinner.

W. A. Haven, vice president of the association during the past year, was chosen president as the result of the annual election of officers, succeeding W. W. Winship, superintendent of coke ovens at Steelton, Pa., Bethlehem Steel Co. Mr. Haven, who recently was made vice president of Arthur G. McKee & Co., Cleveland, formerly was blast furnace superintendent for the Republic Iron & Steel Co. at Youngstown. O., and has served in several executive positions in the Eastern States association in addition to being a member since its organization.

J. E. Lose was named to succeed Mr. Haven as vice president. Mr. Lose, superintendent of Carrie furnaces, Carnegie Steel Co., Rankin, Pa., was secretary of the association during the past year. H. P. Zeller, vice president and general manager, Donner-Hanna Coke Corp., Buffalo, N. Y., was elected secretary-treasurer.

Using Blast Furnace Gas

The discussion on "The Use of Blast Furnace Gas for Heating Coke Ovens" was presented by F. B. Thacher, assistant general manager, By-Products Coke Corp., Chicago, Ill. Mr. Thacher described results obtained at the Chicago plant during seven-months' operation of coke ovens using blast furnace gas over varying periods of coking time..

The paper of A. J. Ebner, Freyn Engineering Co., Chicago, on "The Use of Blast Furnace Gas for Heating Steel Plant Furnaces" also treated the subject of disposition and utilization of blast furnace gas but with special reference to its use in heating furnaces. This involved a discussion of furnace design suitable for the efficient combustion of blast furnace gas in addition to a comparison of the economy of this use as against the consumption of such gas as boiler fuel. These papers, however, pointed out that different factors affect individual cases to a certain extent in a determination of the most economical use of utilizing blast furnace gas, despite the general basic results and trends that have been determined.

Editorials

Steel Profits Follow Tonnage Up

STEELMAKERS' profits have been enhanced considerably this year as the result of an unprecedented demand and higher prices. The outlook for substantial earnings over the remainder of the year is fairly bright, although it appears unlikely that the gain, if any, over the corresponding period of 1928 will approach that scored during the past five months.

IRON TRADE REVIEW'S composite market average of iron and steel prices at the beginning of this year was about $1 higher than 12 months previously. This advantage was reduced in February, but recently has widened to about $1.50. The higher prices, accompanied by the largest steel output in history, naturally resulted in sharply increased profits.

Current prices of the more important finished steel products generally are $1 to $2 a ton higher than in June, 1928, and practically all of these figures have been reaffirmed recently for third quarter.

The future trend of prices is problematical, depending in a large measure as it does upon the extend of demand. A year ago, prices coursed upward following an easing during midsummer. Production followed suit, although the upturn was more rapid.

The fact that steel production in the last half of 1928 was unusually large makes it doubtful whether the industry can repeat itself this year. The outlook for prices as remunerative as those during the former period is favorable, since the present high level as compared with last year would require a sharper depression to push them down to a parity with 1928 figures. It may be estimated, therefore, that with steel production during the remainder of the year slightly below that for the latter half of 1928, profits still would compare favorably, and for the entire 12 months a substantial increase would be shown.

A factor of unknown weight at this time is the effect upon the last half year output of steel of the unusually heavy buying for automobiles and freight cars in the first half year. Though no pessimistic beliefs are harbored, it remains to be seen whether both automobile production and freight car buying can equal the last half of last year.

This premise, however, contains exceptions. Buyers of semifinished steel, for instance, are faced with an advance in prices during the third quarter but will receive no more for their products than they did during the current period. Taking the industry as a whole, nevertheless, the foundation has been laid for one of the most profitable years in history.

Watch the Nonferrous Metals!

WHILE several important influences in this country are in the direction of slack metal markets, events in Europe in the past week have been decidedly on the constructive and bullish trend. The European zinc cartel was renewed for another year, tin producers showed progress toward rationalization, and reparations agreements were made. The latter action is important to all metals, and especially to copper.

The effects of two of these affairs became apparent quickly in the more active copper export market and the higher and more active tin market. There are differences of opinion on tin prices and the world cartel, but confidence is growing on all sides that the export copper market will hold to its more active condition of the past few days, and probably increase to still greater tonnage over the next few weeks.

The extent of the effect of this export business on the domestic copper market is yet beyond determination, but it is at least certain that sentiment has become stronger on the 18-cent price for the time being. The exact status of the domestic market at present probably will not be revealed for some time. Some people contend that domestic users are rapidly getting into an underbought position, but it will take time to prove it.

The nonferrous metals need close watching over the next few weeks, including zinc, and especially tin and copper.

Power Helps Decentralize Industry

CHEAPER and more abundant power resources are contributing to an alteration of the industrial picture. The fact that many newer industrial plants are being located in smaller communities in preference to the larger population centers is attributed in part to the cheaper and wider distribution of energy. Nat-

urally, other factors contribute to the decentralization trend.

With vast sources of power available, industry has become much more independent so far as location is concerned. Larger municipalities themselves have discouraged by short-sighted policies the establishment of new manufactories, particularly plants producing for wider than local distribution. Burdens in the form of taxation and license fees, based upon the number of employes, have been imposed by local governments. Strongly intrenched labor union organizations have thwarted industrial expansion.

The president of the Illinois Manufacturers' association recently predicted even broader decentralization, citing the number of industries established in smaller cities during the past year. Advantageous power supply makes it no longer necessary to locate in restricted and congested factory districts, where almost prohibitive prices for property may be obtained and where high taxes and special assessments cut into profits. At least, industries are given a broader choice.

Ore Research Will Be Intensified

CHARLES M. SCHWAB'S statement to the Iron and Steel institute that "we are depleting our sources of ore and other raw materials at an enormous rate" is interpreted in the Lake Superior mining regions as meaning a more intensive search will have to be conducted for new ore bodies. Ever since the World war the belief has prevailed that the iron ore industry was overdeveloped for normal requirements, and the producers themselves have said unsatisfactory prices were due to this cause. Prospecting has been greatly reduced, and many of the unprofitable mines have been closed, while the large operators and consumers have been buying into the more desirable properties.

An opinion exists in the industry that the important bodies of merchantable iron ore have been discovered, and hereafter its energies will have to be concentrated toward utilizing the lower grades of ore. Mr. Schwab evidently had this in mind when he said profits on present business should be sufficient to compensate for future expenditures necessary to devise ways of replacing raw materials. While prospecting may be revived on a more extensive scale, the most important progress in the next ten years will not be noted in the results of prospecting so much as those from investigations now being conducted in laboratories and experimental stations. Dr. Henry Mace Payne, consulting engineer of the International Mining congress, recently said no field offers wider opportunities for inventive genius than the beneficiation of mineral products or the profitable recovery of what are termed low grade ores.

Dr. Payne points out that between 1850 and 1920 the country's population increased 360 per cent, while production by American mines of all descriptions advanced 7700 per cent. Further, 22 per cent of the federal income is derived from taxes on the mining industry which pays 93½ per cent of its net profits in state and federal taxes, "or more than double that of any other industry."

Not all of the mineral wealth of the country has been discovered, it is true, but who can doubt that research, more than search, must be relied on to supply the requirements of an industrial age?

Wheat Prices Spread Apprehension

THE recent sweeping decline in the price of wheat has added another uncertainty to the business outlook. Wheat dropped precipitately to the lowest point touched in 15 years and this brought the threat of reduced purchasing power for the farmer. Such a threat naturally sent something of a shiver of apprehension through a great many industries, a large part of whose products are consumed on the farm.

These fears have been somewhat allayed by the fact that the decline in prices apparently has been checked, while some recovery has set in. The constructive turn came with announcement that Washington was contemplating immediate relief. The better mood on the part of the wheat market also was encouraged by reports that the Canadian harvest may not be up to par.

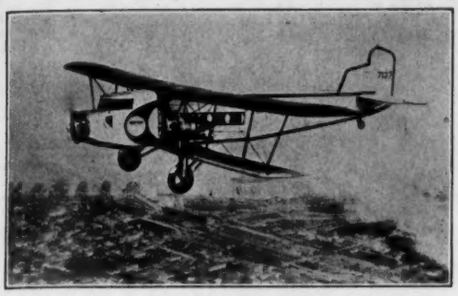
The facts are that pessimism with regard to the situation is a little premature. The majority of farmers have sold their 1928 crop and the growers of wheat themselves have been little touched by the sharp decline in quotations during the last two months. Whether or not the market situation will become serious to them depends almost entirely upon what happens to prices over the next two months. This, in turn, will depend upon weather and crop conditions in growing countries.

Last year was one of the great crop years in this country. The rest of the world also harvested bumper harvests, with the result present world stocks of wheat are about 200,000,000 bushels greater than one year ago. If the crop in 1929 proves to be another heavy one there will be a surplus which will prove burdensome. On the other hand, if crop growing conditions over the next month or so should turn unfavorable the situation would be different. Admittedly the present outlook is for large harvests, but there is not sufficient certainty on this point to justify such sharp declines as recently were witnessed in the wheat mart.

IRON TRADE REVIEW

Volume 84, Number 24 — Published Every Thursday

E. L. SHANER, Editor. — *J. D. PEASE, Advertising Director.* — *F. F. LIGHT, Circulation Manager.*



Metals Assuming Greater Importance in Aircraft Construction. Page 1600.

IRON TRADE REVIEW will publish from time to time abstracts of the report of the President's Conference Committee on Recent Economic Changes in the United States. As an introduction, the committee's summary of its findings is printed, in part, beginning on page 1587. As an outgrowth of the President's conference on unemployment in 1921 three surveys have been made under government auspices. The latest was begun in 1928, when Herbert Hoover was chairman of the committee, and makes a critical appraisal of factors for stability and instability in basic American industries.

The Readers' Page

CONTENTS

For June 13, 1929

SPECIAL ARTICLES

Industry Geared to Higher Speed, Chief Economic Change 1588
Metallurgy Simplified for Shop Use—Chap. XII (Concluded)—By E. Preuss 1592
Iron and Steel Electrical Engineers to Meet 1595
Determines True Price Trend in Open-Hearth Rails from 1914..... 1596
Portable Ornamental Buildings of Porcelain-Coated Sheets 1598
Metals Assume Greater Importance in Aircraft Construction 1600
Mirrors of Motordom 1602
Steel Corporation Answers Bethlehem Claims 1604
Trade Practice Standards Adopted by Gray Iron Institute..... 1605
Digest of Machine Tools..... 1606
Editorials 1609

BUSINESS TREND

Motor Car Output Decline Is Small By John W. Hill..... 1612

Automobile Production 1612
Pig Iron Situation 1613
Steel Ingots 1613
Blast Furnace Rate 1614
Bradstreet's Index 1614
Railroad Earnings 1615
Weekly Railroad Traffic 1615

MARKET REPORTS

Review of Markets..... 1616
Iron and Steel Prices..... .....1616, 1617, 1618, 1621, 1631, 1650

Pig Iron 1619
Coke 1620
Ferroalloys 1620
Nuts, Bolts, Rivets 1620
Iron and Steel Scrap 1621
Semifinished 1622
Bars 1623
Plates 1623
Pipe 1624
Sheets 1625
Tin Plate 1625
Structural Shapes.. 1626
Reinforcing Bars 1627
Railroad Equipment 1628
Cold Finished Steel 1629
Wire and Nails.... 1629
Strip Steel 1629
Nonferrous Metals 1630
Coke By-Products 1630
Warehouse Markets 1631
Pacific Coast Markets 1632
Iron Ore 1633
Foreign Markets.... 1641
Machinery Markets 1644
Crane Inquiry and Awards 1644

GENERAL NEWS

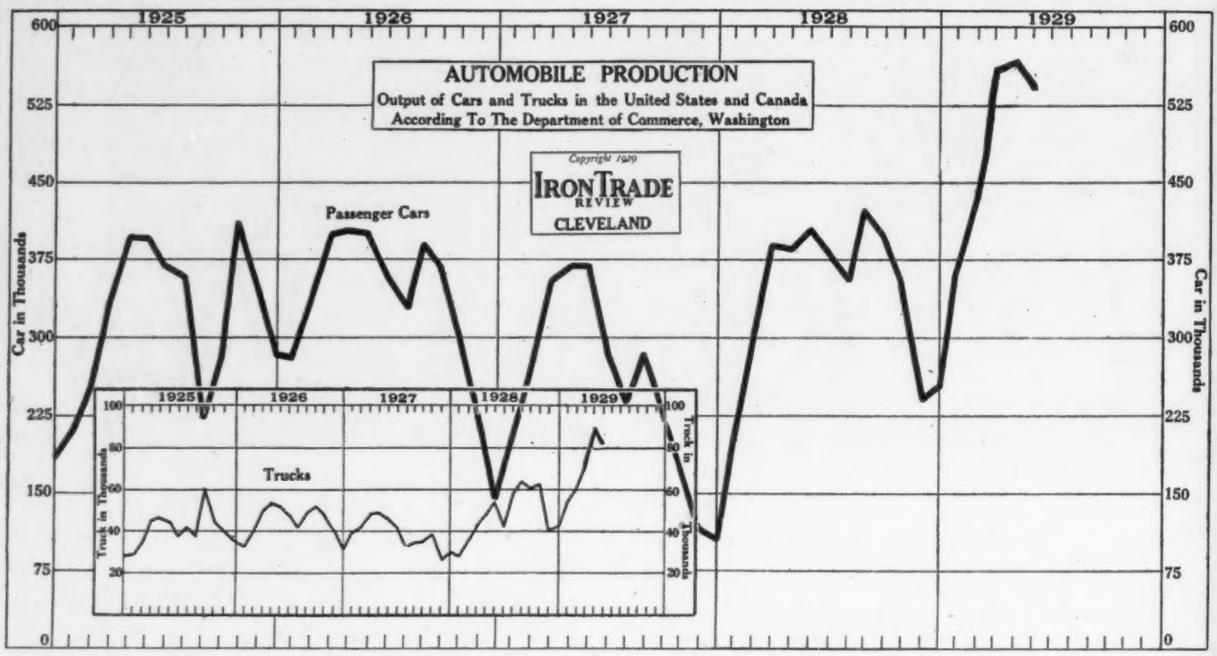
Manganese Fight Features Senate Tariff Hearings 1634
Industrial Men in the Day's News—George R. Hanks..... 1635

Men of the Industry 1636
Here and There in Industry 1638
Obituary 1640
Construction and Enterprise 1645
New Incorporations 1648
Trade Publications 1648

IRON TRADE REVIEW is published by the Penton Publishing Co., Cleveland, O. Member, Audit Bureau of Circulation: Associated Business Papers Inc.; and National Publishers Association. Branch offices: 1347 Peoples Gas Bldg., Chicago; 410 Traction Bldg., Cincinnati; 2203-2206 No. 220 Broadway, New York; 2148-49 Oliver Bldg., Pittsburgh, 1703-11 Claus Spreckel Bldg., San Francisco; 1653 Pennsylvania avenue, Washington; and Boston. Foreign offices: Caxton House, Westminster S. W. 1, London; 9 Rue de Londres, Paris, France; Wilhelmstrasse 114, Berlin, S. W. 48, Germany; cable address: *PENTON*, Cleveland; *TROTRAPEN*, London. Terms: Subscription in United States, Cuba and Mexico, $6 per year; in Canada, $8.50 per year and in Great Britain and other countries £2:0:0 per year. *Entered at the Postoffice at Cleveland as Second Class Matter.* *Copyright 1929 by the Penton Publishing Co.*

The A. B. P. is a nonprofit organization whose members have pledged themselves to a working code of practice in which the interests of the men of American industry, trade and professions are placed first—a code demanding unbiased editorial pages, classified and verified paid subscribers and honest advertising of dependable products

The Business Trend



Motor Car Output Decline Moderate

By JOHN W. HILL, Financial Editor

MAY brought a decline in the number of motor vehicles produced but the recession was so small as to leave the total figure very near the peak and at a new high record for the month. Preliminary estimates indicate the 624,000 cars and trucks were turned out in the United States and Canada. This was an increase of 36 per cent over the total for May, 1928.

COMPARED with the huge record of 662,500 cars and trucks in April a decline of about 6 per cent is disclosed. Production in May was at the annual rate of approximately 7,500,000 units compared with 7,940,000 units as the annual rate in April. For the first five months of the year the aggregate production of cars and trucks was 2,832,000 compared with 1,898,000 in the corresponding period of 1928.

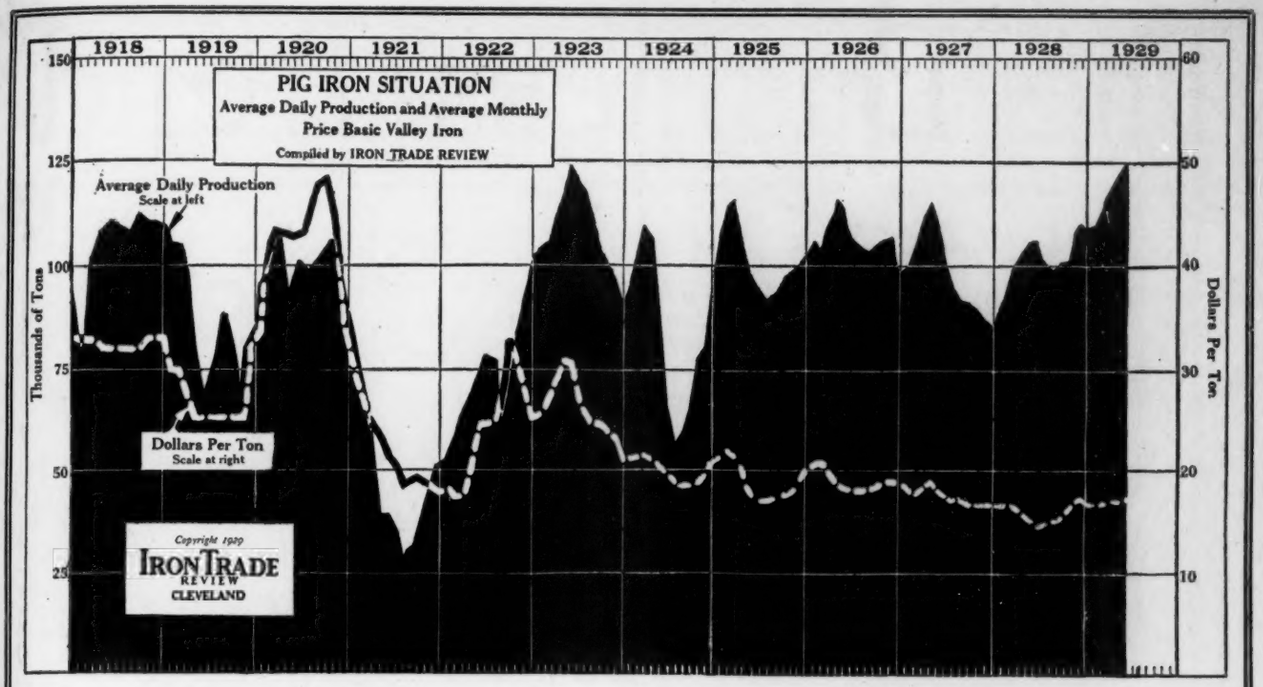
THIS increase of nearly 50 per cent in output largely represents the gain for the Ford Motor Co. During May it is estimated that the average decline in production for companies other than Ford was about 10 per cent. It seems probable that the recession of outputs of the majority of makers will become more marked during the current month and in July.

FORECASTS of greater stability on the part of Ford output are based upon the fact that this company was practically out of the market for about two years. It seems probable that there was a substantial accumulation of demand for this particular grade of car. Meanwhile, the automobile industry has been breaking all records and continuing its high rate of output beyond all reasonable expectations.

THE iron and steel industry also climbed to new levels in May, both pig iron and steel ingot outputs arriving at high marks in daily average output for the month. Never before has the iron and steel industry held to capacity operations for so protracted a period. That this high rate has not given rise to unhealthy symptoms is evident from the firmness of prices.

THE automobile industry has been an important factor in stimulating iron and steel activities, but the railroads also have come forward as an impressive market factor this year. During the first four months of the year net operating income of Class I roads gained 23 per cent over that for the corresponding period of 1928. Gross gained only 8 per cent.

The Business Trend

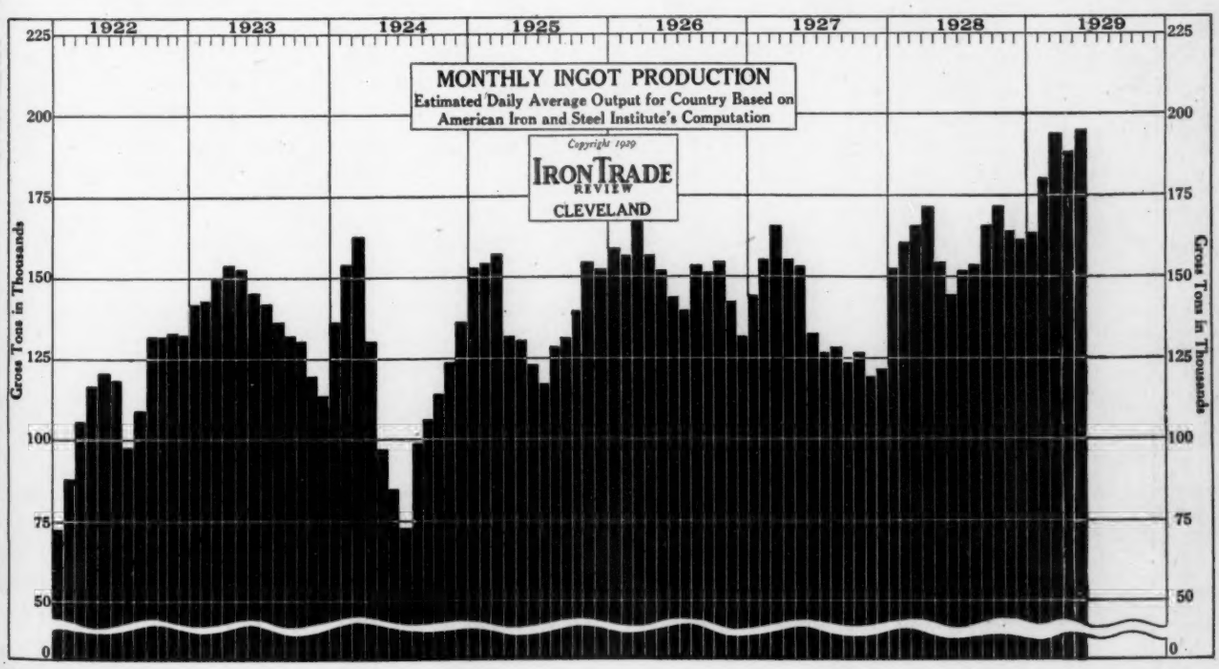


Pig Iron Situation

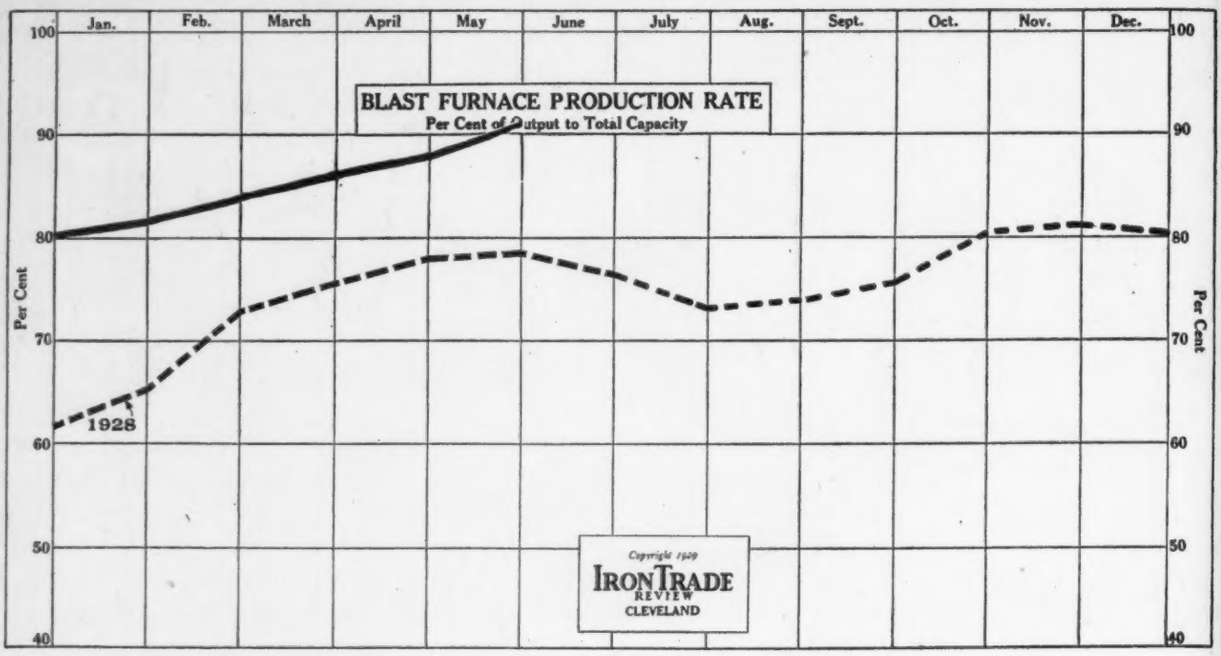
PRODUCTION of pig iron reached a new high level for all time in May with a daily average rate of 125,757 gross tons. This compared with 122,106 tons in April and 106,219 tons in May, 1928. The previous high mark in the production of pig iron was 124,790 tons, the daily average in May, 1923. For the first five months of the year production of pig iron was 17,922,550 tons, compared with 15,428,123 tons in the corresponding period of 1928. Prices of pig iron have been holding steady.

Steel Ingots

FOLLOWING many months of high activity the steel industry registered another new record in May with the highest output of ingots in history. Daily average production of ingots during the month was 195,302 tons, a gain of nearly 3 per cent compared with the rate of 189,924 tons in April. The May rate exceeded the previous high record of 194,548 tons in March. Ingot output for the first five months of the year was at the rate of 60,800,000 tons annually, a new high level.



The Business Trend

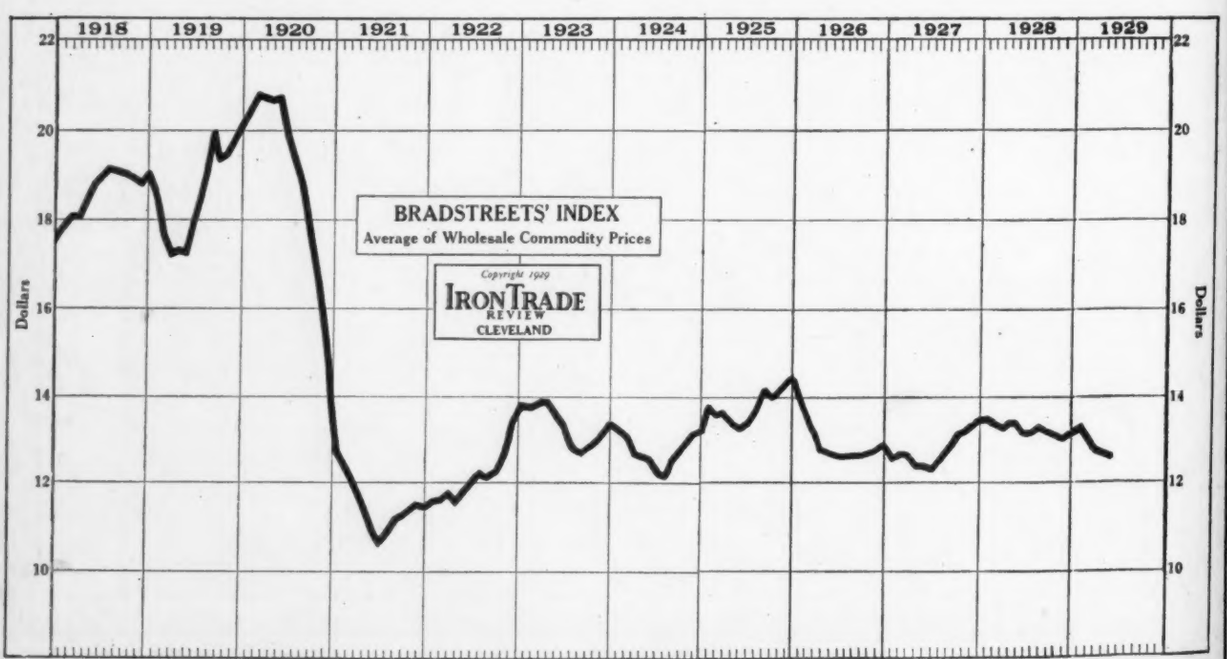


Blast Furnace Production Rate

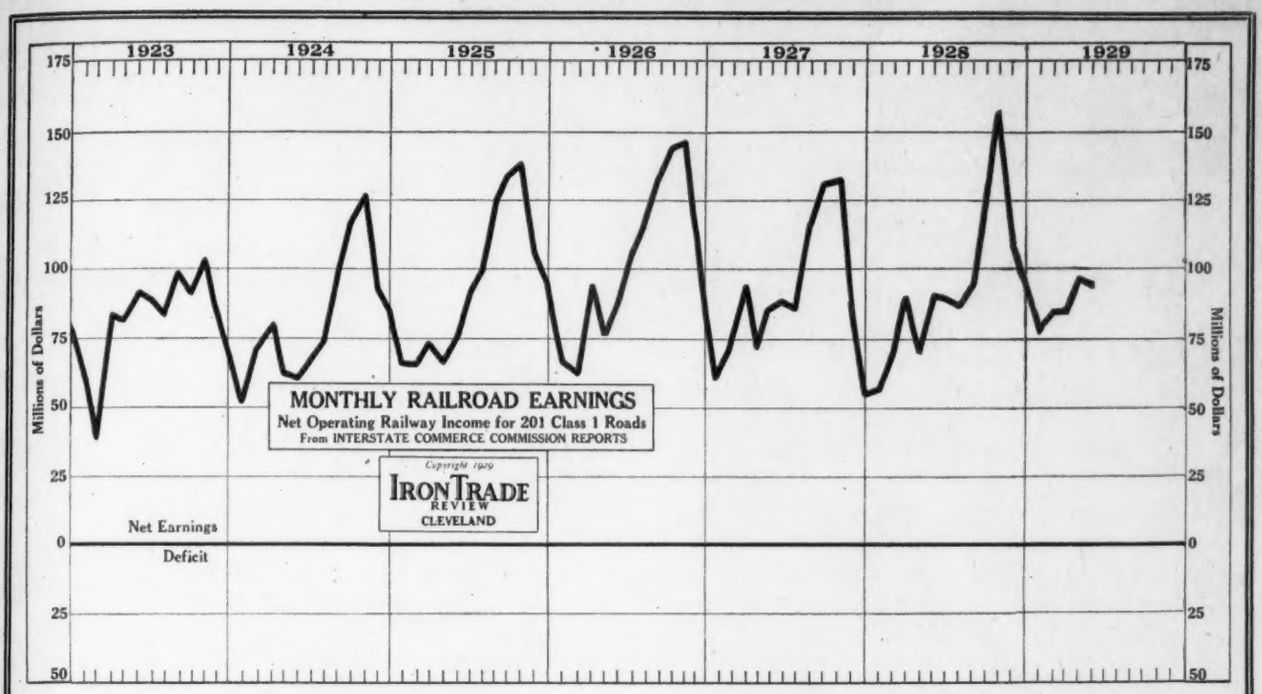
THE rate of blast furnace operations climbed to a high mark in May. Production of pig iron for the month was 91.1 per cent of total capacity of all blast furnaces of the country, estimated at 50,367,-665 tons as of Dec. 31, 1928, by the American Iron and Steel institute. In April the rate of production was 88.7 per cent and in May, 1928, it was 78.3 per cent. In May, 1927, blast furnaces produced iron at the rate of 77.7 per cent of their aggregate capacity at that time.

Bradstreet's Index

BRADSTREET'S Index number of commodity prices for June 1 shows a decline of 1.7 per cent from that of the preceding month. It is 4 per cent below the level prevailing at the beginning of the year and 5.6 per cent below that of one year ago. The index is now almost equal to that of June, 1927. However, it is 17 per cent above the low point touched in June, 1921. Wholesale prices of commodities, as measured by Bradstreet's Index, are now 40 per cent below the peak reached in 1920.



The Business Trend

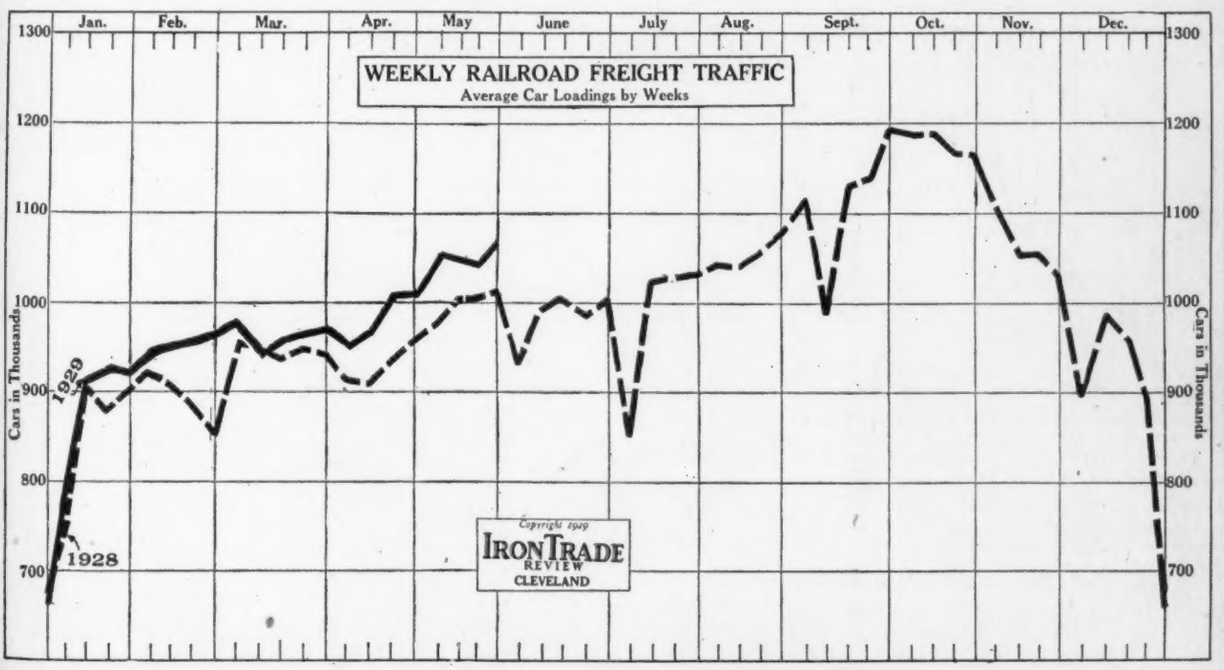


Railroad Earnings

EARNINGS of Class I railroads in April reached the highest total ever attained in that month. Net operating income of 183 Class I carriers was $94,204,000 in April, compared with $97,000,000 in March, but showing an increase of 33.4 per cent over the $70,617,000 earned in April, 1928. The good return was achieved although gross revenue increased only 8.2 per cent compared with one year ago. Net operating income of Class I roads for the first four months of the year gained 22.8 per cent.

Weekly Freight Traffic

LOADINGS of revenue freight for the week ended May 25 totaled 1,061,415 cars, an increase of 15,237 over the preceding week. Compared with the corresponding week of 1928, loadings for the period increased 40,013 cars, while the gain over the like period of 1927 was 34,627 cars. Increases were reported in all commodities moved during the week except livestock, forest products and merchandise in less than carload lots. Continued active business and industrial conditions are indicated.



Backlogs Sustain High Steel Rate

Bookings Lighter but Automotive and Car Needs Promise Support Through Summer—Iron Shipments Heavy—Prices Generally Extended

NEW business in finished steel, while seasonally high, is declining and shipments exceed specifications by a wider margin, but producers are not scaling down their operations proportionately. They are being carried along by the momentum of five consecutive record months and, with production rates only a few points under the peak of May, are whittling down their backlogs.

Ford, Chevrolet Hold Up Motor Output

The automotive and railroad equipment industries alone provide unusual underlying strength. Some automobile manufacturers and parts makers have curtailed as much as 30 per cent, but so long as Ford and Chevrolet, accounting for 55 per cent of all automobile production, do not slacken their gait—and this is the prospect—then the summer slump in this industry will be tempered.

Thus far in 1929 the railroads have ordered 57,000 freight cars, contrasted with 29,400 in the comparable period of 1928. Steel for much of this equipment remains to be rolled, and carbuilders now are assured operations averaging 85 per cent well into autumn. Locomotive orders to date total 490, compared with 132 a year ago.

With unusually good railroad business already in hand, the two most important automobile makers promising to go through the summer at unusually brisk rates and no signs that the normal summer demand for steel will be depressed, the industry shows no hesitancy in maintaining high operating rates. May's alltime ingot record was at the expense of backlogs, as evidenced by the decline of 123,596 tons in the unfilled orders of the Steel corporation May 31 after five successive monthly increases, but this interest continues to work off obligations speedily.

No Rush for Third Quarter Contracts

Continuation of current prices on finished steel into the third quarter has taken the snap out of contracting, normally not spectacular with summer coming on. Users of semifinished steel, which continues scarce, are deferring conflict with

Comparative Prices of Iron, Steel and Coke

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	June 12, 1929	May 1929	March 1929	June 1928
PIG IRON				
Bessemer, del. Pittsburgh	$20.76	20.56	20.11	18.76
Basic, valley	18.50	18.30	17.60	15.80
Basic, eastern, del. eastern Pa.	20.65	20.50	20.25	19.10
No. 2 foundry, del. Pittsburgh	19.76	20.16	19.51	18.61
No. 2 foundry, Chicago	20.00	20.00	20.00	18.00
*Southern No. 2, Birmingham	15.50	15.50	16.00	15.88
**No. 2X, Virginia furnace	20.00	20.75	21.00	20.50
**No. 2X, Eastern del. Phila.	22.76	22.76	22.26	21.26
Malleable, valley	19.00	18.80	18.10	17.00
Malleable, Chicago	20.00	20.00	20.00	18.00
Lake Superior charcoal, del. Chicago.	27.04	27.04	27.04	27.04
†Gray forge, del. Pittsburgh	19.13	19.26	19.11	18.76
Ferromanganese, del. Pittsburgh	109.79	109.79	109.79	109.79

*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.
†Now based on Pitts. dist. fur. price; formerly on Valley base.

COKE				
Connellsville furnace, ovens	2.75	2.75	2.95	2.60
Connellsville, foundry, ovens	3.75	3.75	3.75	3.50
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	36.00	36.00	35.00	33.20
Sheet bars, open-hearth, Pittsburgh	36.00	36.00	35.00	33.50
Billets, open-hearth, Pittsburgh	36.00	36.00	34.00	32.50
Wire rods, Pittsburgh	42.00	42.00	42.00	44.00

	June 12, 1929	May 1929	March 1929	June 1928
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.95	1.95	1.90	1.85
Steel bars, Chicago	2.05	2.05	2.05	2.00
Steel bars, Philadelphia	2.27	2.27	2.27	2.17
Iron bars, Chicago	2.05	2.05	2.00	2.00
Shapes, Pittsburgh	1.95	1.95	1.90	1.85
Shapes, Philadelpiha	2.00	2.06	2.01	2.06
Shapes, Chicago	2.05	2.05	2.05	2.00
Tank plates, Pittsburgh	1.95	1.95	1.90	1.85
Tank plates, Philadelphia	2.15	2.15	2.10	2.10
Tank plates, Chicago	2.05	2.05	2.05	2.00
Sheets, black, No. 24, Pittsburgh	2.95	2.95	2.85	2.70
*Sheets, blue anl., No. 13, Pittsburgh	2.35	2.20	2.10	2.00
Sheets, gal., No. 24, Pittsburgh	3.70	3.70	3.60	3.55
Sheets, black, No. 24, Chicago	3.10	3.10	3.10	2.80
*Sheets, blue anl., No. 13, Chicago	2.50	2.35	2.35	2.15
Sheets, galvanized, No. 24, Chicago	3.85	3.85	3.85	3.70
**Plain wire, Pittsburgh	2.50	2.50	2.50	2.50
**Wire nails, Pittsburgh	2.65	2.65	2.65	2.60
Tin plate, per base box, Pittsburgh	5.35	5.35	5.35	5.25

*Comparisons are with old blue annealed base, No. 10.
**To large jobbers.

SCRAP				
Heavy melting steel, Pittsburgh	18.50	17.85	18.50	14.70
Heavy melting steel, eastern Pa.	16.00	16.25	16.25	13.15
Heavy melting steel, Chicago	15.00	15.45	15.55	12.60
No. 1 wrought, eastern Pa.	16.25	16.25	16.25	15.25
No. 1 wrought, Chicago	15.40	16.40	16.00	12.70
Rails for rolling, Chicago	17.50	17.50	17.50	14.85

Current Prices for Rolled Steel Products

PRICES IN CENTS PER POUND

STEEL PLATES

Pittsburgh, base	1.95c
Philadelphia, del.	2.15c to 2.25c
New York, del.	2.225c to 2.325c
Boston, del.	2.265c to 2.415c
Chicago, base	2.05c to 2.15c
Cleveland, delivered	2.14c
Lackawanna, N. Y., base	2.05c to 2.15c
Birmingham, base	2.10c to 2.20c
Coatesville, Pa., base	2.00c to 2.10c
Pacific Coast, c.i.f.	2.35c
St. Louis, del.	2.27c
Detroit, del.	2.19c to 2.24c

STRUCTURAL SHAPES

Pittsburgh, base	1.95c
Philadelphia, base	2.00c to 2.11c
New York, del.	2.195c to 2.245c
Boston, del.	2.265c to 2.415c
Chicago, base	2.05c to 2.15c
Cleveland, delivered	2.14c
Lackawanna, N. Y.	2.05c to 2.15c
Birmingham, base	2.10c to 2.20c
Bethlehem, Pa., base	2.00c to 2.10c
Pacific Coast, c.i.f.	2.35c
Detroit, del.	2.19c to 2.24c

BARS

SOFT STEEL

Pittsburgh, base	1.95c
Chicago, base	2.05c to 2.15c
Birmingham, base	2.10c to 2.20c
Lackawanna, N. Y., base	2.05c to 2.15c
Pacific Coast, c.i.f.	2.35c
Cleveland, base, local mills	1.95c
Cleveland, del., outside mills	1.95c to 2.00c
Philadelphia, del	2.27c to 2.32c
New York, delivered	2.29c to 2.34c
Boston, delivered	2.265c to 2.415c
Detroit, del.	2.19c to 2.24c
Pittsburgh, cold finishing	2.05c
Pittsburgh, forging quality	2.15c

RAIL STEEL

Chicago Heights	1.95c
Eastern mills	1.85c to 1.95c

IRON

Chicago, base	2.05c to 2.15c
New York, delivered	2.14c to 2.24c
Philadelphia, delivered	2.12c to 2.22c
Pittsburgh, refined	2.75c to 4.25c

REINFORCING

Pittsburgh, billet, cut lengths	2.30c
Stock lengths from mill	2.00c
Chicago, billet	2.40c to 2.90c
Chicago, rail steel	2.00c to 2.05c
Chicago, rail steel, road and bridge work	1.95c to 2.05c
Philadelphia, cut lengths	2.57c to 2.62c

SHEETS

SHEET MILL BLACK, NO. 24

Pittsburgh, base	2.85c to 2.95c
Philadelphia, delivered	3.17c to 3.27c
Gary, Indiana Harbor	3.05c
Chicago, delivered	3.10c
Birmingham, base	3.10c
St. Louis, del.	3.27c

TIN MILL BLACK, NO. 28

Pittsburgh, base	3.00c
Gary, base	3.10c

GALVANIZED, NO. 24

Pittsburgh, base	3.60c to 3.70c
Philadelphia, delivered	3.92c to 4.02c
Gary, Indiana Harbor	3.80c
Chicago, delivered	3.85c
Birmingham, base	3.85c
St. Louis, del.	4.02c

BLUE ANNEALED

Sheets, No. 13

Pittsburgh, base	2.35c
Chicago district mills	2.45c
Chicago, delivered	2.50c
St. Louis, delivered	2.67c
Philadelphia, delivered	2.67c

Plates, No. 9 and 10

Pittsburgh, base	2.20c
Chicago district mills	2.30c
Chicago, delivered	2.35c
Philadelphia, delivered	2.42c to 2.52c
St. Louis, delivered	2.52c

AUTOMOBILE, NO. 20

Pittsburgh, base	4.10c
Detroit, delivered	4.39c

FURNITURE

Pittsburgh	4.20c

(Turn to the following page)

advanced prices until makers reach the position where they have a surplus to market. Pig iron prices in the East are not so strong. Though scrap prices are resisting in some districts, they face an unequal contest with heavy supplies—to which the Pittsburgh district is an exception—operations of "short" interests and pressure by consumers.

Those melters of pig iron who have not already placed their third quarter requirements are disposed to wait out the market. Quiet closing, without the formality of inquiring, has been heavy and more than half the expected third quarter output probably has been reserved. Automotive industry consumers in particular are slow to cover. Shipments in all districts continue to run ahead of last year. St. Louis and New York report more third quarter activity. More Alabama iron is coming into the eastern markets.

East Still Takes Chicago Business

Deliveries on most finished products are a shade easier. Even so, eastern mills continue to take substantial business in the Chicago district, where barmakers are committed well through the summer and plate and shape deliveries are ten or more weeks deferred. Makers of sheets, strip and cold finished bars are slowly wearing down their backlogs. Structural steel inquiry at Chicago has been expanded 10,000 tons this week, to a total of nearly 40,000 tons. Pending work at Cleveland approximates 30,000 tons. Recent awards of welded pipe have stimulated production to the highest point of the year. Wire products are in slightly diminished demand.

Central Buys 150 More Locomotives

With the placing of 150 locomotives, requiring upward of 7500 tons of plates alone, the New York Central has broken all records; it has ordered 250 thus far in 1929. New inquiry for freight cars includes 500 for the Boston & Maine and 200 for the Buffalo & Susquehanna. The Lackawanna will buy 141 coaches, and its electrification program calls for 4000 tons of plates at the outset. Chicago looks for 5000 freight cars to be placed this summer.

Steel corporation subsidiaries are operating this week at 102 per cent of capacity, a point or two above last week. Independent producers also have increased, to 94 per cent, giving the industry an average of 96½ per cent, against 95 per cent last week.

These current rates are only a slight reduction from the official 99 per cent average for May, when the industry averaged 195,302 tons of ingots daily, exceeding the previous peak of 194,548 tons in March. The May total was 5,273,167 tons, also a new mark. The five-month total for 1929 is 24,085,804 tons against 21,054,170 a year ago.

Composite Market Average

Based on Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (June 12, 1929)	$37.07
Last week (June 5, 1929)	37.07
One month ago (May, 1929)	37.10
Three months ago (March, 1929)	36.42
One year ago (June, 1928)	35.30
Ten years ago (June, 1919)	47.88
Fifteen years ago (June, 1914)	22.58

Unchanged prices on iron and steel products hold IRON TRADE REVIEW composite of 14 leading iron and steel products unchanged at $37.07. Save for a period in May, this is the highest level for this index since 1927.

Current Rolled Steel Prices

PRICES IN CENTS PER POUND UNLESS OTHERWISE INDICATED

Tubular Products Quoted On Last Editorial Page—See Preceding Page For Other Products

HOOPS, BANDS, STRIPS

Hot strip, to 6-in., Pitts.	2.00c
Hot strip 6¼ to 24-in., Pitts.	1.90c
Hot strip, bands 6 in. and under, Chicago	2.10c to 2.30c
Do, 6¼ to 24 in.	2.00c to 2.10c
Cooperage stock, Pittsburgh	2.20c
Do, Chicago	2.30c
Cold rolled strip, hard coils, 16 inches and under by 0.100-inch and heavier, base Pitts., Cleve. (3 ton and over)	2.75c to 2.85c
Worcester, Mass. (3 tons and over)	2.90c to 3.00c

ALLOY STEEL

Hot Rolled

F.o.b. Mills

Alloy Quality Bar Base is 2.65c

S.A.E. Series Number	Alloy differential	Net 100 lb. bars
2000	0.25	$2.90
2100	0.55	3.20
2300	1.50	4.15
2500	2.25	4.90
3100	0.55	3.20
3200	1.35	4.00
3300	3.80	6.45
3400	3.20	5.85
4100 0.15-0.25 Mo.	0.50	3.15
4100 0.25-0.40 Mo.	0.70	3.35
4600 0.20-0.30 Mo. 1.25-1.75 Ni.	1.05	3.70
5100 0.60-0.90 Cr.	0.35	3.00
5100 0.80-1.10 Cr.	0.45	3.10
5100 Chrome Spring	0.20	2.85
6100 Bars	1.20	3.85
6100 Spring Steel	0.95	3.60
Chrome Nickel Vanadium	1.50	4.15
Carbon Vanadium	0.95	3.60
9250 (flats)	0.25	2.90
9250 (rounds squares)	0.50	3.15

COLD FINISHED STEEL

Cold finished steel bars drawn or rolled, Pitts., Chi., c.l.	2.30c
Do, del. Detroit	2.575c
Shafting (turned, polished) Pittsburgh	2.30c
Shafting (turned, ground) mill (Depending on size, 1 3/16 to 7-inch)	2.65c to 3.10c
Cold finished steel bars, Cleve.	2.25c to 2.35c

WIRE PRODUCTS

F.o.b. Pittsburgh, Cleveland, Ironton base

(Per Pound)	Dealer trade	Large jobbers
Bright plain wire, 6 to 9 gage	2.60c	2.50c
Annealed field wire	2.75c	2.65c
Galvanized wire	3.20c	3.10c
Barbed wire, galvanized	3.40c	3.30c
(Per 100-pound keg)		
Wire nails	$2.75	$2.65
Galvanized nails	4.75	4.65
Polished staples	3.20	3.10
Galvanized staples	3.45	3.35
Cement coated nails	2.75	2.65

Manuf. wire, del. Detroit 2.735c

Wire nails, del. Detroit $2.785 to $2.885

Joliet, DeKalb and Waukegan, Ill., Anderson, Ind., and Chicago prices $1 per ton over Pittsburgh-Cleveland-Ironton base on products made there; Duluth $2 higher; Worcester, Mass., Fairfield, Ala., $3 higher.

Woven wire fencing, retailers, Pittsburgh-Cleveland, net ton $65.

Anderson, Ind., $1 higher, Chicago $2 higher, Duluth, Birmingham $3 higher.

CUT NAILS, CHAIN PILING

Cut nails, c.l., f.o.b. mills	2.70c to 2.75c
Cut nails, l.c.l. f.o.b. mills	2.80c to 2.85c
Chain, 1-in., proof coil, Pitts.	6.00c
Sheet piling, base, Pittsburgh	2.25c

CAST IRON WATER PIPE

Prices per net ton

Class B pipe

Six-inch and over, Birming'm	$37.00 to 38.00
Four-inch, Birmingham	41.00 to 42.00
Four-inch, Chicago	49.20 to 50.20
Six-inch to 24-inch, Chicago	45.20 to 46.20
Six-inch and over, New York	38.00 to 40.00
Four-inch, New York	41.00 to 42.00
Standard fittings, Bir. base	$100.00

Six to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $10; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $4 higher than Class B.

TIN AND TERNE PLATE

Prices per 100-pound box Pittsburgh

*Tin plate, coke base	$5.35

Gary, Ind., base 10 cents higher.

Long ternes, primes, No. 24 4.00c to 4.10c

*Price subject to quantity differentials.

WASHERS

Wrought, c.l., Pitts. dist.	$6.50 to 6.75 off
Wrought, c.l., Chicago dist.	$6.70 to 6.90 off
Lock: to dealers	85-5 off
Lock: to consumers	85 off

RAILS, TRACK MATERIAL

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	$43.00
Relay rails, Pitts., 60 to 90 lb.	$24.00 to 29.00
Light rails, 25 to 45, mill	$36.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c
Spikes, small railroad, 7/16-inch and smaller, Pitts.	2.80c
Spikes, boat and barge, Pitts.	3.00c
Spikes, railroad, Chicago	2.80c
Track bolts, Pitts., steam roads	3.80c
Track bolts, Pitts., stand, jobbers	70 off list
Track bolts, Chicago	3.80c
Tie plates, Chicago, Pitts.	$43.00

BOLTS AND NUTS

Birmingham and Chicago

Discounts are for legitimate jobbing or large consuming trade purchasing in full-case lots, apply to lists of April 1, 1927.

Small lots are 55 to 60 per cent off.

CARRIAGE BOLTS

All sizes, cut thread	60 to 70 off

Rolled thread ⅝ x 6 and smaller take 10 per cent lower list.

Eagle list	60 to 70 off

MACHINE BOLTS

All sizes, cut thread	60 to 70 off

Rolled thread ⅝ x 6 and smaller take 10 per cent lower list.

Lag screws	60 to 70 off
Plow bolts, Nos. 1-2-3-7 heads	60 to 70 off
Tap bolts	60 to 70 off
Blank bolts	60 to 70 off
Stud bolts without nuts	60 to 70 off
Stove bolts, 75, 20, 10 and 5 off in pkgs., 75, 20, 10 and 5 with 2½ off in bulk.	
Tire bolts	60-5 off

Nuts

Semifinished	60 to 70 off

HEXAGON CAP SCREWS

Milled	80-10-5 off
Upset 1 in. diam. and smaller	85-off

SQUARE HEAD SET SCREWS

Milled	80-5 off
Upset 1 in. diam. and smaller	80-10-5 off

RIVETS

Struc., c.l., Pitts-Cleve.	3.10c
Structural, c.l. Chicago	3.20c
**7/16-inch and smaller, Pitts.	70 and 10 off
Chi., Cleve.	70 to 70 and 10 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Raw Materials and Semifinished Products

SEMIFINISHED MATERIAL

Prices Per Gross Ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$36.00
Pittsburgh, bessemer	36.00
Youngstown	36.00
Cleveland	34.00
Philadelphia	39.30 to 41.30
Chicago	37.00
Forging, Chicago	40.00
Forging, Pittsburgh	41.00
Forging, Philadelphia	44.30 to 46.30

SHEET BARS

Pittsburgh	$36.00
Youngstown	36.00
Cleveland	35.00
Chicago	37.00

SLABS

Pitts., Young.	$36.00
Cleveland	34.00

WIRE RODS

Pittsburgh, Cleveland	$42.00
Chicago	43.00

SKELP

All grades, Pittsburgh	1.90c to 1.95c

IRON ORE

LAKE SUPERIOR ORE

Per Gross Ton, Lower Lake Ports

Old range bessemer, 51½%	$4.80
Mesabi bessemer, 51½%	4.65
Old range nonbessemer, 51½%	4.65
Mesabi nonbessemer, 51½%	4.50
High phosporus, 51½%	4.40

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic, 56-63%	8.00
Copper free low phosphorus 58 to 65 per cent	nominal

FOREIGN ORE

Cents per unit, alongside docks Atlantic ports

Foreign manganiferous ore, 45-55% iron, 6-8% manganese	11.00 to 11.50
North African low phosphorus	12.00 to 12.50
Swedish foundry or basic, 65%, nominal at	9.00 to 10.00
Spanish and North African basic, 50 to 60 per cent	11.50 to 12.00
Newfoundland foundry, 55%	nominal
Tungsten spot and early fut., short ton unit, duty paid	15.50 to 16.00

MANGANESE ORE

Prices do not include duty of 1 cent per pound of metallic manganese contained.

Brazilian	34 to 36 cents
Indian	34 to 36 cents
Caucasian, (53-55 per cent)	36 cents

FLUORSPAR

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$18.00
Washed gravel, import duty paid east. tide., gross ton	$20.15

REFRACTORIES

FIRE CLAY BRICK

Per 1000 f.o.b. works

First Quality

Pennsylvania	$43.00 to 46.00
Ohio	43.00 to 46.00
Illinois	43.00 to 46.00
Kentucky	43.00 to 46.00
Missouri	43.00 to 46.00
Maryland	43.00 to 46.00
Georgia and Alabama	40.00 to 45.00

Second Quality

Pennsylvania	35.00 to 38.00
Ohio	35.00 to 38.00
Illinois	35.00 to 38.00
Kentucky	35.00 to 38.00
Missouri	35.00 to 38.00
Maryland	35.00 to 38.00
Georgia and Alabama	30.00 to 35.00

SILICA BRICK

Pennsylvania	48.00
Joliet, Ill., East Chicago, Ind.	52.00
Birmingham	50.00 to 51.00

MAGNESITE BRICK

Per Net Ton

9 x 4½ x 2½	65.00

MAGNESITE

Net Ton Chester, Pa., and Baltimore base

Dead-burned grain magnesite	40.00

CHROME BRICK

Net ton Chester, Pa., and Baltimore base

9 x 4½ x 2½	45.00

Pig Iron

Large Proportion of Third Quarter Requirements Covered in Middle West—Shipments Heavy—Sell Alabama Iron in East

DEMAND for pig iron is showing unusual strength for this season, some large merchant producers supplying foundries in the Middle West reporting June shipments fully equal to or larger than the May rate, the highest of the first five months of the year. It is reported from Chicago that the larger melters have covered requirements for third quarter. Detroit and Lake Erie furnaces continue to receive a satisfactory volume of business, from week to week, with 60 to 75 per cent of third quarter output booked, while in the eastern territory signs of a third quarter buying movement are appearing. Competition betwen Pittsburgh and valley furnaces is resulting in some concessions, in freight. Alabama basic iron is being sold in Philadelphia.

PITTSBURGH, June 11.—Although large individual tonnages are lacking in third quarter pig iron bookings for the week, sellers are receiving a steady run of small lots which aggregate fairly heavy. The fact shipments on contracts are well maintained gives a steady tone to the market. In many instances buyers have signed up with their regular sources of supply without issuing general inquiries. Although some disposition is noted on the part of larger users to defer forward commitments as long as possible, in anticipation of lower prices, quotations are steady, except in the Pittsburgh district proper where occasional freight rate concessions have resulted from competition between local and outside furnaces.

Boston, June 11.—Pig iron sales in the past week totaled 3000 tons, of which Mystic Iron Works booked 1300 tons. That company obtained slightly more than the equivalent of $18.50, base, on some tonnages. Sales of Buffalo iron continue on the basis of $18.50.

New York, June 11.—The third quarter buying movement in pig iron appears to be getting started in a moderate way. Uncertainty on the part of some consumers is due to the price tendency. First, the delivered level in this territory indicated by $19, base, Buffalo, was shaded, and then $18.50, base, Buffalo, was shaded, so the market now is $18 to $18.50. The Buffalo delivered price at each point in this district is regarded as the price at which other eastern producers aim their delivered prices.

Buffalo, June 11.—Small lot buying of pig iron is increasing slowly, but large tonnage inquiry and sales are lacking. Several eastern consumers who asked for prices for third quarter did not buy. Buffalo furnaces say deliveries are testing their productive capacity. Local district base prices are firm at $19.50 for foundry and $20 for malleable. In eastern territory the minimum is $18.50 on foundry and $19 on malleable.

Cleveland, June 11.—The pig iron market lacks spectacular features, but is in a wholesome position. A buying movement for third quarter has not developed because buying has been at a substantial rate, week after week, and merchant furnaces have sold 60 per cent or more of their output for that period. Associated steelworks operations are taking a larger share of the iron made by Cleveland furnaces. Some sellers report June shipments are starting off at a better rate than those of May, the highest of the first five months of the year. Sales by furnace interests with headquarters at Cleveland totaled 24,600 tons the past week, compared with 22,500 tons the week preceding. A considerable volume of business is being closed quietly without the formality of inquiries. Lake furnace prices are steady. Cleveland makers continue to sell on a basis of $18.50 for outside delivery and $19 for local consumption.

Pig Iron Prices

Per Gross Ton

Bessemer, valley furnace	$19.00
Bessemer, del. Pittsburgh	20.76
Basic, valley furnace	18.50
Basic, Pitts. dist. fur.	19.00
*Basic, del. Pittsburgh	19.63 to 20.13
Basic, Buffalo furnace	18.50
Basic, del. eastern Pa.	20.65 to 21.00
Malleable, valley furnace	19.00
Malleable, Pitts. dist. fur.	19.50
*Malleable, del. Pittsburgh	20.13 to 20.63
Malleable, Cleve. fur. for local del.	19.00
Malleable, Chicago furnace	20.00
Malleable, Buffalo furnace	20.00
Malleable, del. eastern Pa.	22.76 to 24.40
Malleable, Granite City fur.	20.50
No. 1 foundry, Chicago furnace	20.50
No. 1X, Eastern del., Phila.	23.26
No. 1X, Buffalo furnace	21.00
No. 2 foundry, valley furnace	18.50
No. 2 fdy., Pitts, dist. fur.	19.00
*No. 2 foundry, del. Pittsburgh	19.63 to 20.13
No. 2 plain, Buffalo furnace	19.50
No. 2 foundry, Chicago furnace	20.00
No. 2 fdy. Cleve. fur. for local del.	19.00
No. 2 plain, del., Phila.	22.26
No. 2 plain, Virginia furnace	19.50
No. 2 plain, Buffalo, del. Boston	23.41 to 23.91
No. 2 plain, N. J., tidewater	21.28 to 22.78
No. 2 Alabama, Bir. base	15.00 to 15.50
No. 2 Tenn., Birmingham base	15.50
No. 2 Tenn., del. Cincinnati	19.19
No. 2 Alabama, del. Cincinnati	18.69 to 19.19
No. 2 Alabama, del. Chicago	21.51
No. 2 Alabama, del., Cleveland	21.76
No. 2 Alabama, del. St. Louis	19.92
No. 2X, east. N. J., tidewater	21.78 to 23.28
No. 2X, eastern, del. Phila.	22.76
No. 2X, foundry, Buffalo furnace	20.00
No. 2X, Buffalo, del. Boston	23.91 to 24.41
No. 2X, Virginia furnace	19.50 to 20.00
Gray forge, Pitts. dist. fur.	18.50
*Gray forge, del. Pittsburgh	19.13 to 19.63
Low phos., standard, valley	27.00
Low phos., standard, Phila	24.26 to 24.76
Low phos., copper bearing fur.	23.00 to 23.50
Charcoal, Superior, del., Chicago	27.04

*Freight from Pittsburgh district furnace to points in Pittsburgh district 63c, 76c and $1.13 per ton.

CANADIAN PRICES

No. 2 foundry, del. Toronto	24.10
No. 2 foundry, del. Montreal	25.50
Malleable, del. Toronto	24.10
Malleable, del. Montreal	25.50
Basic, del. Montreal	24.50

Silvery iron, Jackson county, O., furnaces, in per cents: 5—$23 to $24; 7—$25 to $26; 8—$26 to $27; 9—$27 to $28; 10—$29 to $30; 11—$31 to $32; 12—$33 to $34; 13—$35 to $36.

Bessemer ferrosilicon, Jackson county, O., furnaces, in per cents: 10—$31 to $32; 11—$33 to $34; 12—$35 to $36; 13—$37 to $38; 15—$41.50 to $42.50; 16—$43 to $44.

Detroit, June 11.—As usual, most consumers of pig iron in this district are slow to cover for the third quarter. Automotive consumers especially are biding their time until the course of automotive production in the third quarter is more apparent. Meanwhile, shipments against second quarter contracts are lighter but the carry-over into the third quarter will be inappreciable. Both malleable and No. 2 foundry iron are $20, base, Detroit furnace, or $20.50, delivered, Detroit.

Chicago, June 11.—Nearly all larger melters of northern pig iron have closed for their estimated needs for third quarter. Much of the tonnage of the smaller buyers remains to be placed. Spot buying is fair. Quotations remain steady at $20, Chicago furnace, for base grades.

Operations at malleable foundries in this district are being reduced slightly by slower demand from the automotive industry. Shipments of pig iron generally in the first 10 days of June were slightly ahead of the comparable period in May.

Cincinnati, June 11.—Pig iron is slightly more active. One seller booked 1000 tons of southern iron and 500 tons of northern. A central Ohio melter is asking for 600 tons of northern iron. Two railroads are seeking 800 and 1000 tons, respectively.

St. Louis, June 11.—Slightly more interest is noted in pig iron than in the past several weeks. Malleable foundries again are in the market. Shipments since June 1 have dropped slightly below the May average. The leading local producer reports its total shipments in May were the largest for any single month on record, except December, 1928. Deliveries of southern furnaces also were heavy. Sales the past several days totaled approximately 4500 tons, of which the St. Louis Gas & Coke Corp. booked 3550 tons. The largest single sales were 1000 tons to an Illinois wheel manufacturer and a like amount to a

(*Concluded on Page* 1628)

The Market Section

Coke

Furnace Fuel Production at New High Point for Month in Connellsville District

CONSUMPTION of furnace coke continues at the recent high rate, but demand for foundry fuel is less active. Production of the furnace grades in the Connellsville district has reached a new high point for this time of the year, while shipments to foundries declined during the past month. Available supplies of the latter grades are larger. Prices generally are steady.

Pittsburgh, June 11.—Beehive coke prices are steady, despite lack of demand in the spot market. The situation in furnace fuel has a better tone than in foundry grades, available supplies of which are larger. The regulation of furnace coke production is holding offerings of this grade to a few carloads at a time, with $2.75 and $2.85 still prevailing. Some negotiations have been started for fuel for nonmentallurgical purposes for delivery after July 1, and while producers are attempting to obtain advances of 10 to 15 cents prices are not tested. Little furnace coke has been closed for third quarter, but shipments on former contracts continue heavy and a number of the contracts extend into that period. Foundry coke shipments declined during the past month. Coke production generally in the Connellsville district is at a new high point for this season, due largely to output at blast furnace ovens. Merchant output continues to decline slightly.

Production of coke in the Connellsville region for the week ended June 1 was 108,390 tons, compared with 104,880 tons the preceding week, according to the *Connellsville Courier*.

Boston, June 11.—For the first time in several months there has been a falling off in orders for foundry coke. Prices are firm.

New York, June 11.—Most consumers of foundry coke have signed up for second half requirements. Some contracts for by-product foundry coke stipulate the price prevailing at time of shipment. Where consumers objected, contracts were made at present prices. These are $11, delivered at most New England consuming points; $9 to $9.40, delivered at Newark, N. J., and $9, delivered at Philadelphia. Beehive foundry coke continues $4.85, Latrobe, Pa., ovens, and $3.75 to $4, Connellsville ovens.

Buffalo, June 11.—Demand for foundry coke continues good. Operation of district ovens is at capacity. Prices are steady.

Detroit, June 11.—Requirements for foundry coke are shrinking moderately as automotive foundries have passed their peak of the first half. Domestic coke requirements are seasonally light. By-product foundry coke is unchanged at $9, Detroit ovens.

Cincinnati, June 11.—Specifications for by-product foundry coke are easing up, particularly in the automotive industry. One automotive manufacturer is in the market for second half needs. No price changes have been announced.

St. Louis, June 11.—By-product manufacturers report demand for metallurgical coke slightly better than normal for the season, though slightly below four to six weeks ago. The rate of production has decreased moderately since April 1, but is above the average at this time last year. Prices are steady.

Birmingham, Ala., June 11.—Coke production and prices remain unchanged from last month. Ovens are operating at more than 85 per cent the normal rate.

Coke Prices

Prices per Net Ton

Beehive Ovens	
Connellsville furnace	$2.75 to 2.85
Connellsville foundry	3.75 to 4.85
New River foundry	6.00 to 6.50
Wise county foundry	4.25 to 5.00
Wise county furnace	3.50 to 4.75
By-Product Foundry	
Newark, N. J., del.	$9.00 to 9.40
Chicago ovens	8.00
New England del.	11.00
St. Louis del.	9.00
Birmingham, ovens	5.00
Indianapolis, del.	8.25
Ashland, Ky., ovens, Connell, basis	6.50
Portsmouth, O., ov., Connell, basis	6.50
Buffalo, ovens	8.75
Detroit, ovens	9.00
Philadelphia, del.	9.00

Ferroalloys

Contracts Renewed for Last Half—Shipments Steady

Pittsburgh, June 11.—Shipments on ferroalloy contracts show little change from the rate of preceding months. Specifications for ferromanganese and spiegeleisen continue the most active in the list of ferroalloys. Ferromanganese users have renewed bookings for the remainder of the year at the unchanged price of $109.79, delivered, Pittsburgh. Spiegeleisen is unchanged at $34 on lots up to 100 tons, with consumers generally under contract for the last half. Little change is noted in demand for special ferroalloys, with prices generally steady and unchanged.

New York, June 11.—Ferrotungsten is slightly lower at $1.35 to $1.45 a pound contained. This is in accord with the decline in ore prices to about $15.50 a short ton unit, except that domestic scheelite holds $1 higher. Other ferroalloys are unchanged.

Tungsten ore is steady after a reduction to 15.50c to 16.00c.

Ferroalloy Prices

(In dollars, except ferrochrome)

Ferromanganese, 78 to 82 per cent, tidewater, duty paid	$105.00
Ferromanganese, del. Pittsburgh	109.79
Spiegeleisen, 19 to 21 per cent, domestic furnace, spot†	34.00
*Ferrosilicon, 50 per cent, freight allowed, carloads	83.50
*Do, less carload	88.50
Do., 75 per cent	130.00 to 150.00
Ferrochrome, 66-70 chromium, 4-6 carbon, cts. per lb. con., del.	11.00
Do., for spot delivery	11.50
Ferrotungsten, stand., lb. cont.	1.35 to 1.45
Ferrovanadium, 30-40 per cent, per lb., contained, on analysis	3.15 to 3.65
Ferro-carbon-titanium carload, producer's plant, net ton	160.00
Do., one ton to carload	170.00
Ferrophosphorus, per ton, carload 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23-25% f.o.b. Anniston, Ala. (24 per cent)	122.50

†Quantity diff. apply on 100 tons and over.
*These prices contract, spot $5 higher.

Bolts, Nuts, Rivets

Third Quarter Contracts Being Booked at Unchanged Prices

NUT AND BOLT PRICES, PAGE 1618

Pittsburgh, June 11.—Manufacturers of bolts, nuts and rivets are sending out third quarter contracts. Prices are unchanged from current levels of 60 to 70 off for bolts and nuts, and 3.10c, Pittsburgh, for large rivets. Specifications are not quite as brisk as a month ago although total business has declined little. Producers have fair backlogs and operations are maintained at 70 to 75 per cent.

Chicago, June 11.—Specifications for bolts and nuts are unchanged except a lessening from some automotive buyers. General manufacturing consumption is steady. Industrial use of large structural rivets is at the rate of the past several weeks. Progress is being made in third quarter contracting, without price resistance. Bolts and nuts are steady at 60 to 70 off list.

Cleveland, June 11.—Makers of nuts, bolts and rivets expect a decline in tonnage this month, although so far it has been slight. One maker here sold $633,722 worth of material in May, establishing its new high record, that being at the rate of $7,000,000 for the year. In some directions automotive buying is down but in others it either has increased slightly or is sustained at last month's high rate. Some third quarter contract's have been written. Prices are firm.

Bridgeport Machine Co., Wichita, Kans., which recently absorbed the Mooney Aircraft Co., plans a plant for the manufacture of airplanes.

Scrap

Slow Decline Continues but Consumption Is Heavy—Dealers in Waiting Mood

CONSUMERS of scrap appear to have ample supplies on hand and on order and are delaying purchases, hoping for lower prices. Quotations are resisting downward pressure and yielding slowly. Declines are mostly 25 to 50 cents per ton. Lessened production at Detroit has caused strength there.

Chicago, June 11.—Bookings of iron and steel scrap fell off sharply in the week just closed. The market continues depressed from price resistance by large consumers and the active short interest. Shipments are heavy and consumption of most grades is unabated. Few distress cars appear, but dealers have held back material on order, awaiting a more favorable time for billing. Another steelworks consumer of heavy melting steel has tightened specifications on that grade, and has been rejecting the class of material formerly accepted for years. This results in a virtual elimination of the so-called secondary grade of melting steel as a market factor. Melting steel is quoted at $15 to $15.50, following a tonnage sale last week at the top of that spread. Most dealers participated in the sale. Further declines of 25 and 50 cents have occurred in miscellaneous rails, electric furnace axle turnings, agricultural cast, brake shoes and railroad grate bars. A sale of No. 1 railroad wrought is reported at 75 cents under the recent level.

Boston, June 11.—There is a little better feeling among scrap interests and though prices have advanced in

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross tons delivered to consumers, except where otherwise stated

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	12.00 to 12.50
Boston, dealers	11.75 to 12.00
Boston, No. 2	10.00 to 10.50
Buffalo, No. 1	16.00 to 17.25
Buffalo, No. 2	14.50 to 14.75
Chicago	15.00 to 15.50
Cincinnati, deal.	13.00 to 13.50
Cleveland, No. 1	15.25 to 15.75
Cleveland, No. 2	14.75 to 15.25
Detroit, No. 1 deal.	13.50 to 13.75
Detroit, No. 2 deal.	11.50 to 12.00
East Pa., del. mill	16.00
N. Y., deal. R. R.	12.50 to 13.35
N. Y., deal. yd.	8.25 to 9.25
Pittsburgh, No. 1	18.50 to 19.00
Pittsburgh, No. 2	15.50 to 16.00
St. Louis, No. 1	14.00 to 14.25
Valleys, No. 1	17.00 to 17.50

COMPRESSED SHEETS

Buffalo (dealers)	14.50 to 14.75
Chicago	13.50 to 14.00
Cleveland	15.00 to 15.50
Detroit, dealers	13.50 to 13.75
E. Pa. new mat.	14.50
Pittsburgh	18.00 to 18.50
Valleys	16.75 to 17.25

BUNDLED SHEETS

Buffalo	12.00 to 12.50
Cincinnati, deal.	10.75 to 11.25
Cleveland	12.50 to 13.00
Eastern Pa.	11.50
Pittsburgh	16.00 to 16.50
St. Louis	10.00 to 10.50

SHEET CLIPPINGS LOOSE

Chicago	9.00 to 9.50
Cincinnati	9.50 to 10.00
Detroit, dealers	8.50 to 9.00
St. Louis	10.00 to 10.50

STEEL RAILS, SHORT

Birmingham	14.00 to 14.50
Boston	10.50 to 11.25
Buffalo	19.00 to 19.25
Chicago (3 feet)	18.50 to 19.00
Chicago, 2 ft. and under	19.00 to 19.50
Cincinnati, deal.	18.50 to 19.00
Detroit, dealers	17.00 to 17.50
Pittsburgh (3 ft.)	19.50 to 20.50
Pittsburgh, 2 ft. and under	20.00 to 21.00
St. Louis	16.50 to 17.00

STOVE PLATE

Birmingham	12.50 to 13.00
Boston consumers	11.50 to 12.00
Buffalo	13.00 to 13.50
Chicago, net	11.75 to 12.25
Cinn., deal., net	9.25 to 9.75
Detroit, net deal.	9.00 to 9.50
Eastern Pa.	12.00
N. Y. deal, mill	8.00 to 8.50
St. Louis	12.50 to 13.00

COUPLERS, SPRINGS

Buffalo	19.00 to 19.25
Chicago	16.50 to 17.00
Eastern Pa.	20.50 to 21.50
Pittsburgh	21.00 to 21.50
St. Louis	14.75 to 15.25

ANGLE BARS—STEEL

Chicago	17.25 to 17.75
St. Louis	13.50 to 14.00

LOW PHOSPHORUS

Buffalo, billets and bloom crops	19.00 to 19.50
Cleve. billet and bloom crops	17.50 to 18.00
Eastern Pa.	21.00 to 22.00
Pitts. billet and bloom crops	22.00 to 23.00
Pitts., sheet bar crops	20.50 to 21.50

FROGS, SWITCHES, GUARDS

Chicago	16.50 to 17.00
St. Louis	15.00 to 15.50

SHOVELING STEEL

Chicago	15.00 to 15.50
Cleveland	11.75 to 12.00
Detroit, dealers	9.00 to 9.50
St. Louis	13.00 to 13.50

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	10.00 to 11.00
Boston, dealers	11.25 to 12.00
Buffalo, No. 1	13.50 to 14.00
Buffalo, No. 2	16.00 to 16.50
Chicago, No. 1	15.40 to 15.95
Chicago, No. 2	15.00 to 15.50
Cinn., No. 2	13.00 to 13.50
Eastern Pa.	16.00 to 16.50
N. Y., No. 1 deal.	12.00 to 12.50
Pittsburgh, No. 2	18.50 to 19.00
St. Louis, No. 1	13.50 to 14.00
St. Louis, No. 2	13.50 to 14.00

SPECIFICATION PIPE

Boston	10.50 to 10.75
Eastern Pa.	15.50 to 16.00
New York, deal.	11.25

BUSHELING

Buffalo, No. 1	14.50 to 14.75
Chicago, No. 1	13.50 to 14.00
Cinn., No. 1 deal	11.00 to 11.25
Cinn., No. 2	6.75 to 7.00
Cleveland, No. 1	13.00 to 13.50
Cleveland, No. 2	11.00 to 11.25
Detroit, No. 1 deal.	12.25 to 12.75
St. Louis, No. 1	10.00 to 10.50

MACHINE SHOP TURNINGS

Birmingham	7.00 to 8.00
Boston	6.50 to 6.75
Buffalo	7.75 to 8.00
Chicago	8.00 to 8.50
Cincinnati, deal.	8.50 to 9.00
Cleveland	9.50 to 10.00
Detroit	7.25 to 7.50
Eastern Pa.	11.50 to 12.00
New York, deal	7.50
Pittsburgh	11.50 to 12.00
St. Louis	8.00 to 8.50
Valleys	11.00 to 11.50

MIXED BORINGS, TURNINGS
For blast furnace use

Boston, dealers	6.00 to 6.25
Buffalo	11.00 to 11.50
Cincinnati, deal.	9.00 to 9.25
Cleveland	11.00 to 11.25
Detroit, dealers	9.00 to 9.25
Eastern Pa.	10.50 to 11.00
New York, deal.	7.00 to 7.25
Pittsburgh	12.00 to 12.50

CAST IRON BORINGS

Birmingham, chem.	13.00 to 13.50
Birmingham, plain	7.00 to 8.00
Boston chem.	10.00 to 10.25
Boston, dealers	6.25 to 6.50
Buffalo	11.00 to 11.50
Chicago	10.00 to 10.50
Cincinnati, deal	9.00 to 9.25
Cleveland	11.00 to 11.25
Detroit, dealers	9.00 to 9.25
Eastern Pa.	11.50 to 12.00
Eastern Pa., chem.	14.50
New York, deal.	7.00 to 7.75
Pittsburgh	12.00 to 12.50
St. Louis	9.50 to 10.00

PIPE AND FLUES

Cincinnati, deal.	9.00 to 9.50

RAILROAD GRATE BARS

Buffalo	12.25 to 12.75
Chicago, net	12.00 to 12.50
Cincinnati	10.00 to 10.50
Eastern Pa.	12.00 to 12.50
New York, deal.	8.75 to 9.25
St. Louis	12.50 to 13.00

FORGE FLASHINGS

Boston, dealers	9.50 to 10.50
Buffalo	13.75 to 14.25
Chicago	10.50 to 11.00
Cleve. over 10 in.	14.00 to 14.50
Detroit	12.00 to 12.50

FORGE SCRAP

Boston, dealers	8.75 to 9.00
Chicago	10.50 to 11.00
Eastern Pa.	14.00

ARCH BARS AND TRANSOMS

Chicago, net	21.00 to 21.50
St. Louis	21.50 to 22.00

Iron, Steel Works Scrap

AXLE TURNINGS

Boston, deal	6.75 to 7.00
Buffalo	14.50 to 15.00
Chicago	13.00 to 13.50
Cleveland	12.50 to 13.00
Eastern Pa.	14.50 to 15.00
Pittsburgh	15.75 to 16.75
St. Louis	10.00 to 10.50

STEEL CAR AXLES

Birmingham	17.00 to 18.00
Boston, ship point	16.50 to 17.00
Buffalo	19.50 to 20.00
Chicago	19.05 to 19.60
Eastern Pa.	23.50
Pittsburgh	21.50 to 22.00
St. Louis	19.00 to 19.50

SHAFTING

Boston, ship point	14.00 to 14.25
Chicago	17.10 to 17.65
Eastern Pa.	19.00 to 20.00
New York, deal.	14.00 to 14.50
St. Louis	18.50 to 19.00

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	11.00 to 12.00
Boston, iron	14.00 to 14.50
Buffalo, iron	14.00 to 14.50
Buffalo, steel	19.00 to 19.25
Chicago, iron	14.25 to 14.75
Chi., rolled steel	18.50 to 19.00
Cincinnati	12.50 to 13.00
Eastern Pa. cast.	16.50
Eastern Pa., rolled	20.50 to 21.50
N. Y., iron, deal.	12.00 to 12.50
Pittsburgh, iron	16.25 to 16.75
Pittsburgh, steel	21.00 to 21.50
St. Louis, iron	14.00 to 14.50
St. Louis, steel	17.00 to 17.50

No. 1 CAST SCRAP

Birmingham, cup.	13.00 to 14.00
Buffalo	16.00 to 16.25
Boston, textile	16.00 to 16.50
Chicago, mach.	16.25 to 16.80
Chicago, railroad	15.70 to 16.25
Chicago, agri.	14.85 to 15.40
Cincinnati, mach. cupolas, gross	19.50 to 20.00
Cleveland, cupola	16.50 to 17.00
Detroit, net, deal.	13.50 to 13.75
East, Pa., cupola	16.00 to 17.00
N. Y., cup., deal.	13.00 to 13.50
N. Y., del. local foundries	17.00
Pittsburgh, cupola	15.00 to 16.00
San. Fran., del.	13.50 to 14.00
Seattle	15.50 to 16.00
St. L. No. 1 mach.	15.25 to 15.75
St. Louis, No. 1	14.50 to 15.00
Valleys	16.50 to 17.00

HEAVY CAST

Boston	10.50 to 11.00
Buffalo, breakable	13.00 to 13.50
Cleve., breakable	12.50 to 12.75
Detroit, auto, net dealers	15.00 to 16.00
Detroit, break. deal.	9.50 to 10.00
Eastern, Pa.	15.50
New York, deal.	11.00 to 11.50
Pittsburgh	13.00 to 13.50

MALLEABLE

Boston, railroad	18.50 to 19.00
Buffalo	18.25 to 18.75
Chicago, agri.	16.00 to 16.50
Chicago, railroad	18.00 to 18.50
Cinn., R. R., deal.	15.25 to 15.75
Cinn., agri., deal.	14.25 to 14.75
Cleveland, rail	16.00 to 16.50
Detroit auto deal.	15.00 to 15.25
St. Louis, rail	15.00 to 15.50

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham	13.50 to 14.50
Rails, scrap, Boston	10.50 to 11.50
Buffalo	16.50 to 17.00
Chicago	17.50 to 18.00
Eastern Pa.	17.00 to 17.50
New York	12.25 to 12.75
St. Louis	15.50 to 16.00

LOCOMOTIVE TIRES

Chicago, cut	18.50 to 19.00
St. Louis, No. 1	16.00 to 16.50

LOW PHOS. PUNCHINGS

Chicago	17.00 to 17.50
Pittsburgh	20.00 to 20.50

only a few items, a better movement of some grades indicates a growing interest. Railroad malleable, long bundled skeleton, scrap rails and heavy melting steel are higher.

New York, June 11.—While No. 1 steel appears established around $16 delivered to Pennsylvania mills, prices in several lines of scrap appear softer, including dealers' buying prices for grate bars, rails for rerolling and stove plate. Buying shows little change, some mills claiming to be well covered on scrap for current operations.

Buffalo, June 11.—Additional sales of No. 1 heavy melting steel for Lackawanna have been made at $16, and No. 2 at $14.50. Each price is 50 cents under last sales for this delivery. No. 1 for steelworks which use only this grade is worth $1 to $1.25 more than Lackawanna's price. Specialties have declined sharply, 50 to 75 cents a ton, in small lot sales.

Philadelphia, June 11.—Although consumption of iron and steel scrap continues heavy at eastern plants, reserves and new buying by consumers is small. An interesting development during the past few days was the purchase by one consumer of No. 1 heavy melting steel at $16.25, delivered; however, this involved only a small tonnage and the price is not regarded as reflecting the market on this grade. The market on No. 1 heavy melting steel is quoted at $16, delivered, at which figure some 10,000 tons have been sold to consumers during the past two or three weeks. The flurry at Pittsburgh continues to engage the attention of Eastern dealers, who are able to obtain $18.50, delivered Pittsburgh, for all the railroad steel they can ship.

Cincinnati, June 11.—Steadying of scrap prices in other markets has brought like reaction here. Dealers still fear being short and are remaining quiet. The market is showing strength on special grades.

Detroit, June 11.—Buying of machine shop turnings for Brackenridge, Pa., and Canadian consumers has caused a slight shortage of that grade and the price has responded by a slight rise. Slackening automotive production has lessened scrap tonnage and the market is firmer in most grades.

St. Louis, June 11.—With heavy consumption, buying of iron and steel scrap is steady and in fair volume. Large tonnages are lacking, but small lots bulk quite large. Offerings are not heavy and consumer stocks are decreasing. This is evidenced by readiness with which due quotas are being accepted and the number of requests for anticipations.

Birmingham, Ala., June 11.—Iron and steel scrap prices remain unchanged. Consumers are taking shipments regularly on contracts.

Toronto, Ont., June 11.—While there has been some improvement in iron and steel scrap sales, the market as a whole has not responded to the betterment in pig iron. Sales are confined to small tonnages for spot delivery, with no forward buying. Inquiries are appearing, however, and local dealers look for contract placing within the next week or two.

Pittsburgh, June 11.—Strength in iron and steel scrap has been translated into higher prices following substantial sales of No. 1 heavy melting steel at $18.50. One round tonnage brought $19. Recent active buying apparently has not satisfied mills as some are in the market for additional tonnage. The fact that good steel is not available at prices melters formerly were willing to pay is lending strength. Heavy melting steel on the Pennsylvania railroad list brought around $19, which is 50 cents higher than a month ago. Compressed sheets are in light supply at a top of $18.50. Steel specialties are in strong demand and recent sales have been at higher prices. Blast furnace material also is advanced.

Cleveland, June 11.—While rail shipments of scrap to local mills continue light, shippers being restricted to about 20 per cent of normal, boat cargoes of heavy melting steel continue to arrive every few days for one mill and cargoes of machine shop turnings for another. One of the latter a few days ago brought 1985 tons. Prices here are sustained somewhat by the high figures being paid in Youngstown and Pittsburgh or declines would be met. Dealers here are not buying but the market on No. 1 heavy melting is $15.25 to $15.75. In Youngstown, they are paying $17 to $17.50.

Canadian Scrap

Dealers' Buying Prices

MONTREAL
Per Gross Ton

Iron axles	$22.00
Steel axles	20.00
Car wheels	16.00
Stove plate	13.00
Wrought pipe	6.00
Turnings	6.50
Heavy melting steel	8.00

TORONTO

Steel axles	15.00
Iron axles	17.00
Heavy melting steel	9.50
Turnings	7.50
No. 1 mach. cast (net)	16.00
Malleable (net)	14.00

Semifinished Steel

Third Quarter Business Deferred by Producers—Supplies Easier

SEMIFINISHED STEEL PRICES, PAGE 1618

Pittsburgh, June 11.—Despite evidence of an easier situation in supplies of semifinished steel, producers continue to defer negotiating for third quarter. Requirements of producers for their own finishing mills will not leave a substantial supply of billets, slabs and sheet bars available for outside consumption before the end of next month. Producers have encountered difficulty in holding production of open-hearth furnaces at the peak level of preceding months due to the strain on equipment, but bessemer operations have increased. What intimations are heard of third quarter prices on semifinished indicate the current market of $36 will be continued. Wire rods are unchanged for third quarter at $42 and continue active.

Producers of hot rolled, alloy billets in opening books for third quarter are selling sizes 2½ x 2½ inches to 4 x 4 inches on an alloy bar basis, plus full size extras per standard steel bar card, resulting in slightly increased prices over the old basis.

Philadelphia, June 11.—Some good orders for wire rods were booked here in the past week at $42, base, Pittsburgh. No test has developed on third quarter prices for billets.

Cleveland, June 11.—The market for semifinished steel continues active. The leading local producer has all o fits 14 open hearths scheduled 24 days ahead. This interest probably will open books for third quarter this week. An advance is likely, in line with recent prices announced by valley producers.

Chicago, June 11.—Virtually no semifinished steel is being offered in the open market. No definite announcement has been made as to third quarter prices. It is understood buyers have been awaiting a reduction from the recent advances which carried commercial billets and sheet bars to $37, base, but the attitude of producers is toward extension of present quotations into at least a part of third quarter. It is understood no quarter contracts have been signed. Wire rods are reported steady on the basis of $42, Pittsburgh-Cleveland, or $43, Chicago.

Locomotive Sales Gain

Washington, June 11.—Shipments of electric and steam locomotives show a sharp gain over April, according to department of commerce. Monthly comparison follows:

Year and Month	Shipments Domestic Total	Steam	Electric	Unfilled orders Domestic Total	Steam	Electric
1928						
Jan.	47	22	23	222	161	36
Feb.	59	43	11	204	146	40
March	70	44	15	178	123	37
April	46	38	6	188	129	41
May	41	29	10	220	138	39
Total (5 mos.)	263	176	65	.....	.....	.....
June	51	39	11	201	109	37
July	46	19	5	198	98	59
Aug.	34	23	4	204	135	28
Sept.	41	28	2	178	118	27
Nov.	35	20	1	152	104	31
Dec.	44	36	4	282	238	27
(1928)	550	367	92	.....	.....	.....
1929						
Jan.	23	6	6	278	251	21
Feb.	23	20	1	339	301	20
March	35	31	4	488	419	24
April	61	57	2	495	419	24
May	99	92	2	444	362	22
Total (5 mos.)	241	206	15	.....	.....	.....

Made Superior Director

Pittsburgh, June 11.—Robert Dodds, Pittsburgh attorney, was elected a director of the Superior Steel Corp., succeeding C. A. Lambie, resigned.

Bars

Slightly Easier Delivery Is Developing but Backlogs Continue Heavy—Price Is Unchanged

THIRD quarter bar prices seem to have been established at the same level as second quarter and mills have closed sufficient tonnage to make the situation clear. Some easing is noted in delivery of bars, though delay still is considerable and betterment is slow. Expected lessening in automotive buying has not been fully realized by mills. Chemical extras have been revised.

BAR PRICES, PAGE 1617

Chicago, June 11.—Bar mill operations are close to capacity. It is indicated that delivery problems are less acute in bars than in plates, bookings for which extend 12 to 14 weeks. Bar mill backlogs are about 12 weeks, but shipments are making slightly more headway against specifications. Specifications for summer steel requirements are largely in the hands of mills, and autumn schedules are being made up. Tractor plant schedules are unchecked. Declines in implement activity are considered more likely to become marked by July inventory taking. The June inventories had little effect. Large automotive parts makers in this district have felt relatively light depression from the tapering in some lines of automotive production. Little third quarter tonnage has been booked in bars, and it may be about June 15 or June 20 before actual demand for that period will make itself known. Mills are permitting third quarter tonnage to take care of itself, and are more concerned in working off current specifications to the satisfaction of regular customers.

Eastern mills are reported to be ignoring the 2.15c, Chicago, price in taking soft steel bar tonnage in western territory. Local mills continue to name that figure on some classes of tonnage offered, but 2.05c, Chicago, represents more largely a base price, with tonnage differentials scaling from that point.

New York, June 11.—While mills generally have not announced third quarter steel bar prices, they have quietly signed up many regular customers at prevailing prices. This means that the market here during the third quarter will continue 1.95c to 2.05c, base, Pittsburgh. In connection with this price range it may be said that on most accounts the range is from 1.95c to 2.00c, inasmuch as 2.05c is not frequent and, in fact, seems restricted to occasional small lots. The fact that prices will not change is preventing any stampede to file specifications against expiring second quarter contracts. On the other hand, current needs are heavy, and specifications are active.

Pittsburgh, June 11.—Specifications for hot-rolled merchant bars continue active, buying holding to the average of preceding weeks. Although incoming business is not quite up to shipments, backlogs are declining slowly and delivery is being somewhat improved. Shipments continue deferred two to four weeks on most sizes. Mills still fail to note the seasonal decline in automotive specifications that had been looked for, with tonnage to this industry well sustained by capacity operations of the larger producers. Mills are accepting third quarter contracts for bars at 1.95c, Pittsburgh, unchanged from the second quarter quotation.

Detroit, June 11.—Producers of soft steel bars are extending the present level of 1.95c, Pittsburgh, into the third quarter. Shipments into this district this month will show only a moderate decline from those of May, but incoming specifications for July shipment are lightening perceptibly. Users generally have no stocks and specifications mirror faithfully current consumption. A large automotive user is bringing bars by water from Cleveland, some of which are shipped there by Youngstown mills.

Philadelphia, June 11.—Third quarter contracting for soft steel bars continues, usual prices being 1.95c to 2.00c, base, Pittsburgh.

Cleveland, June 11.—Some recession is noted by outside mills in demand for merchant steel bars, although so far this has been but slight. Deliveries of most sizes can now be had within 10 days or two weeks, although this depends somewhat on sizes being rolled during a given week most mills have opened books for third quarter at unchanged figures, 1.95c, Cleveland base, or 1.95c, Pittsburgh.

Plates

Market Is Quieter and Deliveries Are Easier—Third Quarter Orders Being Booked

NEW plate demand shows evidence of moderating, though specifications for the remainder of the second quarter continue fairly active. Deliveries are easier. Most mills are booking orders for third quarter at prices unchanged from present levels. Current business is comprised mainly of small miscellaneous needs. Eastern mills supply large tonnages for the Chicago district.

PLATE PRICES, PAGE 1617

Chicago, June 11.—New plate tonnage added to mill books in the past week was light. A Chicago district fabricator booked about 2500 tons for oil storage work in the South. Oil storage plate inquiry has been reduced by withdrawals of inactive projects and the closing of odd lots, leaving less than 10,000 tons outstanding. Specifications were up to the average of the past several weeks. The business taken by outside mills for the Milwaukee pipe line manufacturer is turning into heavy tonnage. Boiler and light tank manufacturers in the Chicago district are active. Plate shipments are making little headway against specifications despite reductions in unfilled orders. Plate mill operations are close to capacity. While sales largely are at 2.05c, base, Chicago, 2.15c has been obtained for occasional offerings.

New York, June 11.—Order of the New York Central railroad for 150 locomotives entails about 7500 tons of plates which the American Locomotive Co. will need for building them. This business now is under negotiation. Miscellaneous demand is well maintained. Deliveries have eased off slightly. Plate mills have replied to inquiries that there will be no price change for third quarter. The market is 1.95c to 2.05c, base, Pittsburgh, and 2.05c to 2.15c, base, Coatesville, for remainder of second quarter and for third quarter.

Pittsburgh, June 11.—Plate specifications are well maintained as a result of heavy bookings of line pipe and freight cars a short time ago, in addition to a steady demand for miscellaneous uses. Barge builders also have a good total of business on books and are contributing a steady volume of specifications. Deliveries continue extended as far as 60 days, one factor contributing to this situation being the sold-up condition in the Middle West which has prompted the placing of tonnage in this district. Producers are taking third quarter contracts at 1.95c, Pittsburgh, unchanged from the current period.

Cleveland, June 11.—Between 4500 and 6000 tons of plates, part of the tonnage required for recent locomotive awards by the New York Central, are expected to be rolled here. Other plate demand is confined to moderate tonnages. Boiler shop demand has shown increased improvement. An inquiry is current for 225

to 250 tons of plates up to 12 feet long for the Detroit-Edison Co. These are to be 72 inches wide but must be planed to within 1/16-inch of exact size.

Philadelphia, June 11.—Plate demands are quieter, and deliveries have eased slightly. Some eastern mills are operating full, with deliveries of sheared plates in two to three weeks, and universals in about two weeks, while other mills are engaged at 75 to 85 per cent, and can make fairly prompt shipments.

CONTRACTS PLACED

570 tons, 20-inch riveted pipe, Walla Walla, Wash., to Beall Tank & Pipe Co.
400 tons, plates and shapes, five deck scows for New York State Canal commission; to Midland Barge Co.

CONTRACTS PENDING

4500 to 6000 tons plates for 150 locomotives awarded by New York Central. Expected to be rolled in Cleveland.
225 tons, 12-foot plates for Detroit Edison Co., Detroit. Bids being taken.

Corp. Unfilled Tonnage Drops Sharply

Following five successive months of increases, the unfilled tonnage of the United States Steel Corp. declined as of May 31. A reduction of 123,596 tons or 2.88 per cent brings outstanding orders down to 4,304,167 tons, as the following comparison reveals:

Date	Total	Change, tonnage	Change, per cent	
May 31, 1929	4,304,167	123,596—	2.88	—
Apr. 30, 1929	4,427,763	17,045+	0.38	+
Mar. 31, 1929	4,410,718	266,377+	5.70	+
Feb. 28, 1929	4,144,341	34,854+	0.84	+
Jan. 31, 1929	4,109,487	132,775+	3.34	+
Dec. 31, 1928	3,976,712	303,712+	8.25	+
Nov. 30, 1928	3,673,000	78,030—	2.80	—
Oct. 31, 1928	3,751,030	52,662+	1.42	+
Sept. 30, 1928	3,698,368	74,325+	2.05	+
Aug. 31, 1928	3,629,042	53,116+	1.40	+
July 31, 1928	3,570,927	66,082—	1.81	+
June 30, 1928	3,637,009	220,187+	6.45	+
May 31, 1928	3,416,822	455,311—	11.70	—
Apr. 30, 1928	3,872,133	463,073—	10.70	—
Mar. 31, 1928	4,335,206	62,983—	1.43	—
Feb. 29, 1928	4,398,189	122,242+	2.80	+
Jan. 31, 1928	4,275,947	303,073+	7.62	+
Dec. 31, 1927	3,972,874	518,430+	15.00	+
Nov. 30, 1927	3,454,444	113,404+	3.39	+
Oct. 31, 1927	3,341,040	192,921+	6.10	+
Sept. 30, 1927	3,148,113	47,924—	1.49	—
Aug. 31, 1927	3,196,037	54,023+	1.70	+
July 31, 1927	3,142,014	88,768+	2.80	+
June 30, 1927	3,053,246	2,305+	0.075	+
May 31, 1927	3,050,941	405,191—	11.70	—

To Make Stainless Steel

Shawinigan Falls, Que., June 11.—Shawinigan Water & Power Co. has completed the organization of a new subsidiary to be known as the Shawinigan Stainless Steel & Alloys Ltd., which will produce stainless steel and similar products, mainly for the needs of the parent company and its subsidiaries. It is reported that the management of the new concern will be the same as that of the Shawinigan Chemicals Ltd., a wholly owned subsidiary of the Shawinigan Water & Power Co.

Pipe

2398-Ton Cast Order Placed—Line Pipe Bookings Boost Schedules—Merchant Demand Better

LONG BEACH, Calif., bought 2398 tons of cast pipe. Walla Walla, Wash., ordered 1283 tons of riveted steel. Contractors' jobs are more numerous in Detroit and farther west. Municipal lettings are scarce. Private business is more active in the East. Steel pipe demand is improving. Recent line pipe bookings send operating schedules higher.

PIPE PRICES, PAGE 1618

Chicago, June 11.—While cast iron pipe business continues discouraging, a number of contractor jobs are appearing in the Detroit area. Subdivision work in most of the North Central pipe markets is extremely slow. Chicago activity is restrained by the financial conditions. Moderate contractor work has appeared in Wisconsin, Indiana and various sections of Illinois. Plymouth, Ind., took bids yesterday for about 250 tons of 4 to 8-inch pipe. Carload prices are reported steady at $37 to $38, base, Birmingham, or $45.20 to $46.20, delivered Chicago, for the larger diameters of cast water pipe.

Boston, June 11.—A large amount of private business is being booked by the pipe manufacturers. Municipal lettings are still scarce. On the brisk demand from private sources, prices show a decidedly firm trend. The United States Pipe & Foundry Co. was awarded 150 tons for Marlboro, Mass., and R. D. Wood & Co. will furnish 350 tons for Wayland, Mass. as well as 300 tons for Marlboro, Mass. East Providence, R. I., is in the market for 120 tons of 6 and 8-inch pipe.

Pittsburgh, June 11.—Producers who shared in recent line pipe awards have boosted operations of their welded mills. Production of these units now is nearing the best level of the year. Seamless demand has improved but little despite a slight pick-up in demand from the oil country as a result of more active drilling operations. Merchant pipe is fairly active and shows a fair gain compared with the rate earlier this year when building operations were lagging. Both mechanical tubing and locomotive and boiler tubes maintain most of their activity although mechanical tubing is moving more slowly to automotive buyers. Operations of welded pipe mills average from 60 to 70 per cent, with seamless production from 70 to 90 per cent.

Cleveland, June 11.—Demand for buttweld merchant pipe holds up fairly well. In several directions the jobber turnover for early June is below that of a year ago, but the tonnage for the second quarter will be ahead of the second quarter, 1928. A few orders for 150 to 300 tons of pipe in popular sizes for building, etc., have been placed recently with northern Ohio mills.

Birmingham, Ala., June 11:—Cast iron pipe foundries are receiving sufficient orders to keep them operating several weeks on the present high basis. Company officials say that buying is from hand-to-mouth and believe this condition is likely to continue indefinitely. No orders for large tonnage are in sight.

CONTRACTS PLACED

2398 tons, 6-inch class B, Long Beach, Calif., to United States Pipe & Foundry Co.
350 tons, 6 and 8-inch pipe, Wayland, Mass., to R. D. Wood & Co.
341 tons, 6 to 12-inch class B, Oceanside, Calif., to O. U. Miracle Construction Co.
300 tons, 6 and 8-inch pipe, Newton, Mass., to R. D. Wood & Co.
238 tons, 2 to 18-inch class C pipe, improvement Reynard way, San Diego, Calif., to Butterfield Construction Co.
200 tons, 4 and 6-inch pipe for Lexington, O., to Central Foundry Co.
200 tons, 6 to 12-inch pipe for Oak Park, Ill., to Lynchburg Foundry Co.
150 tons, 6 and 8-inch pipe for Marlboro, Mass. to United States Pipe & Foundry Co.
115 tons, 4 to 8-inch pipe for Irwin, Iowa, to McWane Cast Iron Pipe Co.
104 tons, 6-inch class B, improvement of Percy street, Yuba City, Calif., to Western Roads Co.

CONTRACTS PENDING

250 tons, 4 to 8-inch pipe for Plymouth, Ind. Bids June 10.
208 tons, 4-inch class C, improvement Coldwater Canyon road, Los Angeles. Bids June 24.
200 tons, 12 to 16-inch pipe for Alhambra, Calif. Bids being taken.
193 tons, 4 to 8-inch class B, improvement, Millbrea district, Redwood City, Calif. Bids rejected.
12 0tons, 6 and 8-inch pipe, East Providence, R. I.
117 tons, 4 to 10-inch class C, improvement, La Jolla boulevard, San Diego, Calif. Bids opened.

Donner Prior Preferred Stock Called

Donner Steel Co. Inc, has called its outstanding 8 per cent cumulative prior preference stock for redemption June 29, 1929, at $109 per share. An issue of $6 convertible preferred stock has been authorizd, together with sufficient common stock to make provision for conversion. This new $6 convertible preferred stock has been offered in exchange for the outstanding 8 per cent stock at the rate of 1.1 shares for one, or one share and $10

cash, at the stockholder's option prior to the redemption date.

On July 1 the company will have $6,313,000 bonds outstanding; 30,000 authorized shares of $6 convertible preferred stock and 570,000 authorized shares of no par value common stock.

Tin Plate

Heavy Bookings Due This Week—Operations Slightly Lower

TIN PLATE PRICES, PAGE 1618

Pittsburgh, June 11.—Tin plate demand for general line can requirements is well maintained although commitments for vegetable pack containers are less active than a month ago, due partly to adverse weather conditions. As specifications for August are due June 15 heavier bookings are looked for this week. Operations show a further decline due to operating difficulties and a shortage of semifinished steel. Some independent producers continue at capacity, with the average for the district 85 to 90 per cent. American Sheet & Tin Plate Co. again is in production at its Laughlin works at Martins Ferry, O., following a shutdown part of last week as the result of mechanical troubles.

Slag Association Moves To Simplify Sizes

The National Slag association at its twelfth annual meeting conducted at the organization's headquarters in Cleveland, June 6-7, voted to accept services of the division of simplified practice, Washington, to co-ordinate size requirements of existing specifications of many technical organizations which at present show a wide variation in their limits. As the first step in this work, a survey of the industry will be made at once. This action followed addresses made by H. R. Colwell, division of simplified practice, and F. H. Jackson, senior engineer of tests, bureau of roads, both of Washington.

The association also authorized a 10-year test program in the laboratory of the Bessemer Limestone & Cement Co., Bessemer, Pa., along lines of work which are extensions of certain investigations being accomplished by committee C-9 of the American Society for Testing Materials.

All member companies were represented at the meeting. Officers for the coming year were re-elected as follows: President, C. L. McKenzie, president, Duquesne Slag Products Co., Pittsburgh; vice president, C. E. Ireland, vice president and sales manager, Birmingham Slag Co., Birmingham, Ala.; and secretary-treasurer, H. J. Love, 937 Leader building, Cleveland.

Thompson Foundry Inc., Silver Creek, N. Y., has been incorporated to take over the foundry business conducted by Thompson & Son.

Sheets

Heavy Production This Summer Expected by Mills—Backlogs Are Substantial

MILLS in the Pittsburgh district anticipate little reduction in sheet output during the summer, judging from the inflow of new orders and heavy backlogs. Despite the approach of warm weather, variations noted in production so far have been due mainly to lack of sheet bars. The recent declining tendency in autobody sheet business is less pronounced.

SHEET PRICES, PAGE 1617

Pittsburgh, June 11.—It is becoming increasingly evident that there will be little decline in sheet production during the greater portion of the summer. Business now on books of producers will insure steady operations through the greater part of July, and if the current rate of incoming orders is sustained backlogs will be substantial during the greater portion of the third quarter. No further decline is noted in commitments for automobile sheets. Blue annealed sheets are particularly active. Sheetmakers still are encountering difficulty in obtaining semifinished steel. Consumers are not showing a great deal of interest in third quarter contracting although some material has been booked for that period. Most users have substantial tonnages already entered on mill books. Only on black sheets are mills able to make delivery in four weeks, and other grades extend as high as six and seven weeks. Black sheets generally are firm at 2.95c, Pittsburgh, with the exception of sales in the Detroit district. Some concessions also continue to be made on galvanized. Blue annealed sheets are steady at 2.35c, Pittsburgh, for the No. 13 gage, with light plates at 2.20c.

Buffalo, June 11.—Sheet orders for the third quarter are being booked at current prices. Shipments are large, and district operations 90 per cent.

Cleveland, June 11.—Sheet specifications are shrinking. A number of automobile builders, however, continue their April-May rates. Some mills, therefore, note no recession. Others can deliver black sheets in three or four weeks and galvanizd in four to five. Black and galvanized prices are not entirely firm, some 2.85c and 3.60c quotations still being obtainable.

Youngstown, O., June 11.—Leading sheet producers report they are obtaining full quoted prices on third quarter orders, now being placed more freely. While specifications have eased off, backlogs continue heavy and operations are maintained close to capacity, with full-finished departments in most instances continuing on a 100 per cent basis. Autobody specifications do not extend quite so far ahead as at the beginning of June. One producer is booked entirely through June and July. Unless specifications recede considerably, hot weather production schedules may further lengthen deliveries. While it is understood prices have been made to large automotive buyers of black sheets at 2.85c by mills in other districts, producers here consider 2.95c well established on ordinary business. The usual quotation on galvanized sheets is 3.70c, base, Pittsburgh. Blue annealed prices are firm.

Detroit, June 11.—Although pressure for prompt delivery of sheets, especially full finished, is less insistent, shipments for June will be seasonally high, perhaps a record for the month. Specifications for delivery early in the third quarter are tapering off. On autobody sheets the full price of 4.10c, Pittsburgh, generally prevails. On black sheets 2.85c is being accepted by buyers for third quarter. Mills are endeavoring to wipe out concessions under this level which have been made for some shipments this quarter. Strip mills continue to take business formerly going to blue annealed makers, but in the noncompetitive line the latter are attempting to enforce the recent shift in the base gage.

Chicago, June 11.—Sheet mill backlogs are lengthening. Blue annealed sheets are extended about eight to ten weeks, while deliveries on black and galvanized are lengthened to five and six weeks. This extension, however, is not representative of new tonnage booked. In virtually no department of finishing mill output has the shortage of semifinished steel been so acute as in sheet production. One group of hot mills at Indiana Harbor has been operating on a five-day weekly basis for over two months. Third quarter tonnage is being added to mill books, but thus far mills have exerted only moderate sales pressure. Chicago delivered prices are reported firm at 3.10c for No. 24 black 3.85c for No. 24 galvanized, and 2.50c for No. 13 blue annealed sheets. Blue annealed plates are 2.35c, base, delivered.

St. Louis, June 11.—With the exception of galvanized material, which continues relatively slow, demand for sheets holds up well. Blue annealed deliveries still are deferred.

Philadelphia, June 11.—Third quarter sheet orders continue to be booked in this district at present prices. They are 2.85c to 2.95c, Pittsburgh, for black; 3.60c to 3.70c for galvanized; 2.10c to 2.20c for blue annealed plates ,and 2.35c for blue annealed sheets. Specifications are less active.

Structural Shapes

Pending Work High at New York, Chicago, Cleveland—Award Total Well Sustained for the Week—Third Quarter Prices Unchanged

AGGREGATES of pending structural work in the various market sections are high. New York leads with about 60,000 tons, including a 13,000-ton telephone building. Chicago, where three new jobs are up, involving 1200 tons apiece, follows with 40,000 tons; Cleveland with 30,000 and Buffalo with more than 10,000. Electrification work for the Lackawanna railroad, involves 4000 tons and a building for the New York Central at Harmon, N. Y., takes 3000 tons. A 7000-ton building was let at Chicago; two awarded in the East take 3800 and 3900 tons, respectively; and two Canadian jobs take 4000 and 3000 tons, respectively. Books have been opened for third quarter at unchanged prices, firm on the basis of 1.95c, Pittsburgh. Shipments are still deferred.

STRUCTURAL SHAPE PRICES, PAGE 1617

New York, June 11.—New awards declined somewhat this week last week's aggregate being high on account of the 34,000-ton subway award, reported as 30,000 tons in IRON TRADE REVIEW. Pending business remains at a high level, more than 50,000 tons being active in projects taking 1000 tons or more apiece. Mills, although heavily taxed to meet demands, are slowly cutting down delivery on current business.

Boston, June 11.—Rutland railroad has bought 226 tons for a bridge at Leicester Junction, Vt. Less than 500 tons of shapes is on inquiry.

Philadelphia, June 11.—Current shape bookings are better than several weeks ago. Eastern mills are operating from 80 per cent to full. The market is quoted at 2.00c to 2.11c, base, delivered Philadelphia, with occasional transactions at less.

Pittsburgh, June 11.—Despite the lack of large fabricated steel projects emanating from this district, mills receive a steady volume of specifications for plain material. Steel for a local freight house for Pennsylvania railroad 1805 tons, has been placed. Fabricating shops are fairly well engaged, with the bulk of current business confined to small tonnages. The market for plain material continues 1.95c, Pittsburgh, with books opened for the third quarter at unchanged prices.

Buffalo, June 11.—Several small lots of shapes were placed for fabrication. However, some larger tonnages are pending, considerably more than 10,000 tons in all, including the new city hall. Third quarter buying is expected to be much larger than second quarter orders. Two new schools, to involve 2000 to 3000 tons, are planned by the Buffalo board of education.

Cleveland, June 11.—Although about 30,000 tons of structural work is pending here, much is in the formative stage. Mill specifications are keeping up well. A bridge at Newark, O., for Baltimore & Ohio railroad, 1125 tons, went to Mt. Vernon Bridge Co. A. Bentley & Sons, general contractors, Toledo, O., will this week buy the steel, 500 to 650 tons, for the junior high school there. Bidding will start early in July on the jail-courts building, to take 1500 tons or more. The 1.95c, Pittsburgh, price is unchanged for third quarter.

Chicago, June 11.—Between 10,000 and 12,000 tons of fresh structural inquiry has appeared. Inquiry now stands at 35,000 to 40,000 tons, about half of which has reached the active stage. Among the newer projects are three 1200-ton jobs, a downtown garage, Chicago; office building, Kansas City; and a Milwaukee hotel. Several structural steel buyers have made inquiry for third quarter, but little tonnage for that period has been booked. Deliveries on plain structural material are 8 to 10 weeks, and for plate structural steel three to four weeks additional represent the maximum delivery dates. The price of 2.15c, Chicago represents negligible tonnage in actual sales.

Awards Compared

	Tons
Awards this week	38,386
*Awards last week	59,660
Awards two weeks ago	33,289
Awards this week in 1928	23,810
Average weekly awards, 1928	39,082
Average weekly awards, 1929	42,299
Average weekly awards, May	42,174
Total awards to date, 1928	876,355
Total awards to date, 1929	1,015,175

*Revised.

CONTRACTS PLACED

7000 tons, Patterson building, La Salle street and Wacker drive, Chicago, to American Bridge Co.

4000 tons, Marine building, Vancouver, B. C., to Dominion Bridge Co.

3900 tons, coal breakers, Philadelphia & Reading Coal & Iron Co., including 1700 tons at Somerset, N. Y., to Lehigh Structural Steel Co.

3800 tons, building, International Telephone & Telegraph Co., New York, to A. E. Norton Inc.

3000 tons, Lachapelle bridge, Montreal, to Dominion Bridge Co.

1825 tons, freight house, Pennsylvania railroad, Pittsburgh, to McClintic-Marshall Co., through W. F. Trimble & Sons Co.

1125 tons, bridges, Baltimore & Ohio railroad, Newark, O., to Mt. Vernon Bridge Co.

950 tons, office building, New Rochelle, N. Y., to Easton Structural Steel Co.

850 tons, store building for S. S. Kresge Co., Minneapolis, to American Bridge Co.

800 tons, power plant, Saskatoon, Sask., to Dominion Bridge Co.

725 tons, wire mill building, John A. Roebling's Sons Co., Trenton, N. J., to McClintic-Marshall Co.

700 tons, building, W. F. Hall Printing Co., Chicago, to A. Bolter's Sons.

675 tons, highway bridges in Connecticut, American Bridge Co.

620 tons, mill building, John A. Roebling's Sons Co., Trenton, N. J., to Belmont Iron Works.

525 tons, buildings, Standard Steel Propeller Co., Homestead, Pa., to McClintic-Marshall Co.

500 tons, Taft school, Watertown, Conn, placed through Berlin Construction Co.

500 tons, high school, Philadelphia, to McClintic-Marshall Co.

500 tons, store, S. S. Kresge Co., Detroit, to Whitehead & Kales Co.

500 tons, factory building for undisclosed owner, Rockford, Ill., to American Bridge Co.

500 tons, breaker building, Koppers Construction Co., Wilkes-Barre, Pa., to McClintic-Marshall Co.

500 tons, factory building, C. A. Dunham Co., Michigan City, Ind., to unstated fabricator.

450 tons, viaduct, Union Pacific railroad, Omaha, Nebr., to American Bridge Co.

450 tons, highway bridges in Colorado, to American Bridge Co.

450 tons, bridges, Central Vermont Railway Co., to American Bridge Co.

400 tons, New York Central building, Seventy-seventh and Eighty-sixth streets, New York, to Phoenix Bridge Co.

325 tons, work for Koppers Construction Co., Swedeland, Pa., to McClintic-Marshall Co.

300 tons, manufacturing plant, Stone & Webster Inc., Saltville, Va., to Converse Bridge Co.

300 tons, warehouse, Morton Salt Co., Chicago, to Mississippi Valley Structural Steel Co., in addition to 800 tons, previously awarded this same fabricator.

230 tons, high school, Watkins Glens, N. Y., to Buffalo Structural Steel Co.

275 tons, wharf, General Petroleum Corp., Ventura, Calif., 200 tons to Bethlehem Steel Co. and 75 tons to Pacific Iron & Steel Co.

260 tons, bridge, Vineland avenue, Los Angeles, to Pacific Iron & Steel Co.

250 tons, two bridges, Chester county, Pa., to Shoemaker Bridge Co.

240 tons, machine shop, Southern Pacific Co., San Francisco to Consolidated Steel Corp.

226 tons, bridge, Leicester Junction, Vt., for Rutland railroad, to Phoenix Bridge Co.

200 tons, garage, 542 West Twenty-sixth street, New York, to McClintic-Marshall Co.

155 tons, White auto sales building, Newark, N. J., to Shoemaker Bridge Co.

150 tons, automobile display building, Chevrolet Jefferson Co., Saginaw, Mich., to Flint Structural Steel Co.; Cowles & Mutscheller, architects.

150 tons, factory, Fifteenth and Bryant streets, San Francisco, to Western Iron Works.

125 tons, store, S. H. Kress Co., Lakeland, Fla., to Ingalls Iron Works.

105 tons, state highway bridge, New Jersey, to Phoenix Bridge Co.

100 tons, highway bridges, Vernon county, Wisconsin, to orden-Allen Co. and Continental Bridge Co.

CONTRACTS PENDING

13,000 tons, telephone building, Second avenue

and Thirteenth street, New York.
4000 tons, Delaware, Lackawanna & Western railroad, structural work on electrification program.
3000 tons, New York Central railroad, building addition, Harmon, N. Y.
2000 tons, reconstruction of Fine Arts building, Chicago.
1500 tons, jail-courts building, Cleveland. Plans ready about July 1. To take bids July 15.
1200 tons, Schuyler hotel, Milwaukee.
1200 tons, garage, Van Buren street and Plymouth court, Chicago.
1200 tons, Professional building, Kansas City, Mo.
1200 tons, Freuler hotel, Milwaukee.
900 tons, mill buildings, Newport Rolling Mill Co., Newport, Ky.
750 tons, Fine Arts building Columbus, O. Bids in June 11.
625 tons, nurses' home, St. Marks' hospital, New York.
600 tons, field house, University of Wisconsin, Madison, Wis.
600 tons, Maytag building, 430 North Michigan avenue, Chicago.
550 tons, state highway bridge, New York.
500 tons, junior high school, Toledo, O. General contract to A. Bentley & Sons.
485 tons, Norton Memorial Infirmary, Louisville, Ky.
450 tons, highway bridge, Logan, Iowa.
296 tons, court house, Brooklyn, N. Y.
200 tons, sales and service building, Hartford, Conn.
100 tons, garage and stock building, Edison Illuminating Co., Hyde Park district, Boston.
Unstated tonnage, church, First Church of Christ Scientist, Cleveland.
Unstated tonnage, buildings, Michigan Bell Telephone Co., Saginaw and Grand Haven, Mich. Smith, Hinchman & Grylls, Detroit, architects.
Unstated tonnage, showroom and service building, the White Co., St. Clair avenue and East Forty-ninth street, Cleveland. Plans being prepared by Hadlow, Hughes, Hicks & Conrad Inc.

Algoma Breaks Records

Sault Ste. Marie, Ont., June 11.—Three new production records were made at the works of the Algoma Steel Corp., here, during May, according to official announcement. The 18-inch mill produced 7498 tons of steel, the previous high record being 6392 tons made in February last; the 32-inch billet mill produced 11,404 tons of steel, compared with the former record of 10,222 tons made in April, 1929; and the coke ovens turned out 53,712 tons of coke, the former record being 52,264 tons made in March.

Buy Fewer Implements

Chicago, June 11.—Analysis of the farm implement industry here indicates that tight money and low crop prices have tended to reduce new buying. On the other hand, it is shown that leading manufacturers of implements have substantial unfilled bookings.

Aggregate earnings of the implement companies for the half year probably will better 1928 by about 20 per cent.

Revises Chemical Extras

Pittsburgh, June 11.—The Jones & Laughlin Steel Corp. has issued a new card of chemical specifications and quality on structural shapes, plates, bars, small shapes and hot rolled steel flats under ¼-inch thick, effective June 10. Lower ranges are provided on silicon, phosphorus and sulphur, among other revisions.

Concrete Bars

Mills Pressed for Deliveries —Awards Restricted — Inquiries Are Mostly Small

PRESSURE still is being brought to bear upon mills for concrete bar deliveries, which in some sections are still four weeks deferred. Awards, while not as numerous as expected at this time, involve several attractive lots, led by 1250 tons for Milwaukee court house. A city-county building at Seatlte will take 2000 tons and a viaduct at Chicago, 1200 tons. Prices are unchanged.

REINFORCING BAR PRICES, PAGE 1617

Chicago, June 11.—Numerous bookings of small lots of billet reinforcing bars are reported, but the aggregate does not run into heavy tonnage. Rail steel bar sales and shipments are slightly ahead of a year ago, while billet bar business is said to be the lightest in more than five years. The 1200-ton Burnham avenue viaduct is the heaviest current reinforcing bar project. Rail steel bars show some unsteadiness, but the billet bar quotation is maintained at 2.40c for a minimum of 18 tons and over.

May building permits for Chicago decreased 14.95 per cent in value from May a year ago.

Boston, June 11.—A total of 410 tons awarded in concrete bars included 210 tons for the Gardner Memorial building, attached to the Children's hospital, this city. The 200 tons comprised a number of odd lot tonnages. Little in the way of large tonnage is pending but prices continue firm.

Pittsburgh, June 11.—Mills are under pressure for delivery of concrete reinforcing bars although awards continue restricted. Backlogs are not extensive but delivery in some cases extends as far as four weeks on certain sizes. Total specifications so far this month are holding close to the May rate. Prices for third quarter are unchanged from current quotations of 2.30c, Pittsburgh, for cut lengths and 2.00c for stock lengths.

Buffalo, June 11.—An excellent demand for reinforcing steel for road work exists. New inquiries aggregate nearly 1000 tons. One 400-ton award is noted. Heavy shipments are being made. Orders are expected to increase when several large construction contracts are awarded here later in the month.

Cleveland, June 11.—All concrete bar lettings of late have involved small tonnages. Larger work is coming up, however, and the outlook is bright for building throughout the summer.

Awards Compared

	Tons
Awards this week	4,558
Awards last week	5,128
Awards two weeks ago	15,475
Awards this week in 1928	4,627
Average weekly awards, 1928	6,189
Average weekly awards, May	7,668
Average weekly awards, 1929	6,509
Total awards to date, 1928	171,543
Total awards to date, 1929	156,207

CONTRACTS PLACED

1250 tons, court house, Milwaukee, to Kalman Steel Co.
500 tons, second unit Shuffleton power plant, Seattle, to Pacific Coast Steel Co.
400 tons, Producers' warehouse and elevator, Buffalo, to Jones & Laughlin Steel Corp.
350 tons, apartment, 5050 Sheridan road, Chicago, to Inland Steel Co.
300 tons, telephone exchange building, Illinois Bell Telephone Co., Evanston, Ill., to Concrete Steel Co.
210 tons, Gardner Memorial building, Children's hospital, to Concrete Steel Co.
200 tons, warehouse for D. N. & E. Walter, and Garfield high school addition, Seattle, to Pacific Coast Steel Co.
192 tons, building, Houghton-Mifflin Co., Boston, to Jones & Laughlin Steel Corp., through Turner Construction Co.
175 tons, Masonic temple, McAlester, Okla., to Laclede Steel Co.
150 tons, extension to steam tunnel, University of Chicago, Chicago, to Joseph T. Ryerson & Son Inc.
141 tons, paving at Santa Ana, Calif., to unstated interest.
140 tons, office building, South Bend, Ind., to Concrete Engineering Co.
125 tons, factory building for M. Snower Co., 535 South Franklin street, Chicago, to Calumet Steel Co.
125 tons, store and office building, Horders Inc., 149 East Ohio street, Chicago, to American System of Reinforcing.
100 tons, apartment building, 1624 Sherwin avenue, Chicago, to Calumet Steel Co.
100 tons, Juvenile home, Polk street, Chicago, to Concrete Engineering Co.
100 tons, St. Athanasus school building, Philadelphia, to Concrete Steel Co.

CONTRACTS PENDING

300 tons, foundation for opera house and Legion building, San Francisco. Bids June 18.
300 tons, (mesh), for Youngstown-Olcott, N. Y., highway; William J, Knauer, Attice, N. Y., low bidder.
293 tons, bridge over Feather river, Sacramento, Calif. Bids received.
275 tons, (mesh), for Halsey Corners-Savannah highway, New York; bids June 21 at Albany.
256 tons, bridge over Salinas river, Sacramento, Calif. Bids June 26.
225 tons, (mesh), for Adams-Watertown, N. Y., highway; Francis J. Downing, Buffalo, low bidder.
200 tons, Michigan avenue bridge, Buffalo. Bids soon.
155 tons, (mesh), for Jamestown-Ashville, N. Y., highway; J. & M. Doyle Co., Erie, Pa., low bidder.
150 tons, mausoleum, Hayward, Calif. Bids being taken.
149 tons, paving in Orange county, Sacramento, Calif. Bids received.

133 tons, paving in Madera county, Sacramento, Calif. Bids June 26.

120 tons, two bridges in Sacramento county, Sacramento, Calif. Bids June 26.

120 tons, factory building, Sedgwick street, Chicago.

102 tons, paving in San Bernardino county, Sacramento, Calif. Bids received.

100 tons, West Town State Bank building, Chicago.

100 tons, warehouse and office buildings, the Norton Co., Hamilton avenue, Cleveland.

100 tons, building, the White Co., St. Clair avenue, Cleveland.

100 tons, Midland bank building, Cleveland. General contract to Aronberg-Fried Inc.

100 tons, Medical Arts building, Akron, O.

100 tons, Fine Arts building, Columbus, O.

100 tons, 2-story building, Atlas Plating Works Inc., 277-281 East 156th street, Cleveland.

Pig Iron

(*Concluded from Page* 1619)

car builder in the district. Prices are firm.

Birmingham, Ala., June 11.—Pig iron sales are small, but nearly equal the output. Orders for third quarter are slow. Prices are unchanged. The proposed reduction in freight rates from Birmingham to the East has not been favorably received by the railroads, it is reported. Some concessions may be authorized on rail-water shipments through Savannah.

Toronto, Ont., June 11.—A stronger demand for merchant pig iron has developed due to opening of books for third quarter. Some large contracts have been closed. Spot sales during the week increased about 10 per cent over recent weeks. Prices are easier, contracts for third quarter being booked at the lower level of the recent 50-cent spread.

Philadelphia, June 11.—At least four eastern consumers have placed trial tonnages of basic iron with Alabama furnaces at delivered prices figuring less than eastern Pennsylvania basic delivered in this territory. Alabama basic had already been tried out by one eastern mill. Foundry iron sales are restricted to small and moderate size lots. Westinghouse Electric & Mfg. Co. bought 200 tons of foundry iron for South Philadelphia. York Ice Machinery Corp. purchased several hundred tons of foundry iron. Norfolk & Western railroad is inquiring for its requirements for the remainder of the year; Lackawanna wants 100 tons; Baltimore & Ohio 200 tons of foundry and 50 tons of charcoal iron; Western Maryland also is reported in the market. Baldwin Locomotive Works apparently has closed on its recent inquiry for 1000 to 1500 tons of 2.50 to 3.25 silicon iron. This order is believed to have gone to an Alabama producer at about $22.01, delivered.

Stock Put on $2 Basis

The National Enameling & Stamping Co., Granite City, Ill., has declared a semiannual dividend of $1 a share on its common stock. Last Dec. 31 a similar dividend was declared, the first since 1923.

Rails, Cars

150 Locomotives Bought—More to Follow—Car Buying Lags—More Rail Tonnage Shaping Up

NEW YORK CENTRAL'S locomotive order for 150 involves a $14,000,000 expenditure. Total of engine orers to date this year is 490 as against 132 placed in same period last. Car awards are low but pending inquiries, 100 to 500 at a time, are nearer closing. Secondary rail buying is deferred, in some cases until August. Track fastening sales are well sustained.

RAILROAD TRACK PRICES, PAGE 1618

Chicago, June 11.—Several secondary rail tonnages are pending, but not much is in sight before late summer. St. Louis-Southwestern has an inquiry out for material to build 45 miles of track, which includes about 6000 tons of track fastenings as well as rails. The 40,000-ton rail inquiry for the Southern Pacific is pending. Hocking Valley also has a tonnage before the market. Sales of track fastenings in the week just closed totaled about 3000 tons.

Car builders have many of the specifications complete and forwarded to the mills for the large number of cars on order in the west. Schedules now indicate that the present 85 per cent operations of the car shops will extend well into the autumn months. Rock Island has 300 gondolas pending.

New York, June 11.—New York Central placed an order for 150 locomotives with the American Locomotive Co., involving an expenditure of $14,000,000. Forty-two electric locomotives remain on the inquiry list for this road. New York Central thus far this year has bought 250 locomotives involving $22,500,000. This award brings locomotives placed to date this year to 490 against 132 for the same period last year.

Pittsburgh, June 11.—Shipments of track fastenings to accompany new rail tonnage will probably be completed within the next 30 days. Some additional business will then be forthcoming, some secondary rail purchases being contemplated. Additional car business is absent in this district but old orders will see local builders at least through the third quarter. Light rails continue quiet but producers are not interested in diverting more steel than necessary for their production.

Cleveland, June 11.—Secondary rail tonnage purchases by railroads tributary to this territory will probably not occur until August. One rail mill shipped 90,000 tons in May and will ship a similar quantity this month. July will be dull. Small filling-in quantities are bought occasionally by street railroads and industrial purchasers.

CAR ORDERS PLACED

Hartford Eastern, one combination passenger and baggage, gasoline rail-motor car to J. G. Brill Co.

Nickel Plate, 21 passenger cars, to Pullman Car & Mfg. Corp.

Reading, one passenger, rail-motor trailer car, to J. G. Brill Co.

St. Louis-San Francisco, underframes and superstructure parts for rebuilding 10 box cars, to American Car & Foundry Co.

Sperry Development Co., one gasoline rail-motor car to J. G. Brill Co.

LOCOMOTIVE ORDERS PLACED

Calumet & Hecla Consolidated Copper Co., one 6-wheel switching locomotive to Baldwin Locomotive Works.

New York Central, 75 Hudson type passenger locomotives and 75 heavy duty Mohawk type freight locomotives to American Locomotive Co., including 50 each freight and passenger for New York Central; 10 passenger and 25 freight for Big 4 and 15 passenger for Michigan Central.

CAR ORDERS PENDING

Boston & Maine, 500 box cars.

Buffalo & Susquehanna, 200 all steel hopper cars, 55-ton capacity.

Delaware, Lackawanna & Western, 141 all steel coaches and motor equipment for reconstruction of 141 present steel coaches as trailers.

LOCOMOTIVE ORDERS PENDING

Bangor & Aroostook, four 4-8-2 type locotives.

New York Central, 42 electric locomotives of 0-6-6-0 type.

To Enlarge Algoma Mills

Sault Ste. Marie, Ont., June 11.—Construction work will be started about the middle of this month on additions to two merchant mills of the Algoma Steel Corp. here. The work will cost $2,500,000 and is expected to be completed by the end of this year. The proposed additions will practically double the capacity of the merchant mills and increase output of finished steel by about 50,000 tons per year.

May Make Auto Sheets

Pittsburgh, June 11.—Apollo Steel Co. has abandoned plans for building a steel plant but is considering adding facilities for making automobile sheets.

Officials of the E. C. Atkins & Co., saw and machinery manufacturers, Indianapolis, have filed papers with the secretary of state changing the number of directors to seven.

The Market Section

Strip

Lessened Buying by Automotive Users Does Not Reduce Specifications—Prices Hold Firm

IN SPITE of some decline in volume of specifications from automobile builders, the total tonnage of strip, both cold and hot, remains fairly even. Other users seem to make up for whatever is lost by some reductions. Producers continue at capacity but shipments are deferred as much as seven weeks by many. Third quarter tonnage is at unchanged prices.

STRIP PRICES, PAGE 1618

Pittsburgh, June 11.—Despite lower commitments for strip steel from automotive interests, tonnage this month shows a slight gain over May for some interests. Backlogs remain fairly extensive on most sizes, particularly on wider hot strip. Shipments of the latter are extended as far as seven weeks and on practically all sizes of hot and cold-rolled, four weeks represents the shortest delivery promise. Operations continue at capacity, with producers who purchase their semifinished steel in a slightly better position as regards supplies. Contracting for third quarter is not active but a number have been signed at unchanged prices, 1.90c and 2.00c, Pittsburgh, for two sizes of hot strip and 2.75c to 2.85c for cold-rolled strip.

Youngstown, O., June 11.—Strip steel demand continues nearly as heavy as at any time this year, with production still at capacity. Prices are firm. Deliveries on wide hot-rolled strips are fully six weeks deferred. On the narrower widths deliveries are being made in two to three weeks.

Cleveland, June 11.—Hot and cold strip steel demand is practically equal to the May rate. In a few instances specifications have shrunk but others have increased, to maintain a fair balance. Automotive tonnage still is heavy. Cold strip is firm at 2.75c, Cleveland-Pittsburgh, and no price interference is encountered on hot at 1.90c, Pittsburgh, on the wide, on which deliveries in some cases are deferred several weeks, although th usual dating is three or four weeks after ordering.

Detroit, June 11.—Makers of hot rolled flats are endeavoring to establish a firmer market and make the full price of 2.00c, Pittsburgh, applicable to business under 6 inches and 1.90c on widths up to 24 inches. Shipments into this district for June will be seasonally high, perhaps a record, but will show a decline from May. Specifications for July delivery reflect the molerate curtailment of the automotive industry.

Officers recently elected by the Milwaukee chapter of the American Society for Steel Treating are as follows: Chairman, M. G. Jewett, Chain Belt Co.; vice chairman, F. A. Hansen, Hevi Duty Electric Co.; and secretary-treasurer, Ray Thiesenhusen, Wesley Steel Treating Co.

Cold Finished Steel

Specifications Suffer No Decline—Prices Are Unchanged

COLD FINISHED PRICES, PAGE 1618

Pittsburgh, June 11.—Producers of cold finished steel bars are receiving a steady volume of specifications and the month to date closely approximates the corresponding period in May. Backlogs are not extensive, although unfilled business on books covers two to four weeks, depending upon size. Although there has been some decline in demand from automotive interests, it is well below expectations and for some interests the rate of buying is unchanged. Most third quarter contracts are at the unchanged price of 2.30c, Pittsburgh.

Cleveland, June 11.—Although June 15 is the deadline for specifications against second quarter cold-finished bar contracts, there will be no particular bulge since 2.35c, Cleveland, is being carried for another quarter. While here and there some buyers are taking out less material, in most instances, specifications are sustained at the April-May rate. Progress is reported in signing up third quarter business.

Indianapolis chapter of the American Society for Steel Treating has announced the following new officers: Chairman, Carl J. Winkler, works manager, Schwitzer-Cummins Co.; vice chairman, R. C. Fielding, heat treating supervisor, Diamond Chain & Mfg. Co.; secretary, M. S. Spencer, general manager, Electric Steel Castings Co.; and treasurer, Axel Weydell.

Wire

Little Reduction in Buying as Summer Period Arrives—Price Holds Steady

SUMMER usually brings marked decline in buying of wire and its products. Expected recession has not been as much as usual this year. Various classes of users continue to take tonnages and the slack season seems to be minimized. Third quarter needs are being covered at second quarter prices. Nails continue in slow demand in all markets.

WIRE PRICES, PAGE 1618

Chicago, June 11.—Tapering of sales in woven fencing, barbed wire and other farm wire products has made little reduction in wire products' specifications. Tonnage booked the first week in June compared favorably with the average in May. Manufacturers' and merchants' wire is steady, while demand for nails is slow. Quotations to large jobbers are 2.55c, Chicago or western mills, for bright plain wire, and $2.70 for wire nails, these quotations applying for such third quarter orders as appear.

Worcester, Mass., June 11.—Varied demand covering the entire line continues to feature the wire market with prices firm on a basis of 2.75c, Worcester base, to dealers. Third quarter outlook remains strong.

Pittsburgh, June 11.—Specifications for wire products are holding well to the rate of preceding weeks, the only change noted being slightly greater activity by jobbers. Nail demand continues slow although slightly faster than a month ago. Buying by automotive interests continues unusually heavy for this period. Fencing material is moving in fairly good volume. Consumers have contracted for third quarter requirements in a fairly large number, with current prices of 2.50c to 2.60c, Pittsburgh, for plain wire and $2.65 to $2.75 for wire nails continued.

Cleveland, June 11.—Manufacturers' wire for widely divergent uses is in good demand and the main sustaining factor in high production. Nail orders are shrinking. Notwithstanding reports of price concessions sales continue to be made every day at the quoted market levels. Some third quarter contracts have been booked by the mills.

Detroit, June 11.—Manufacturers' wire holds steady at 2.735c, delivered Detroit, but wire nails show a weakness of $1 to $2 under the open delivered price of $2.885. Nail demand generally is slow, reflecting to some extent the easiness in the building situation. Manufacturers' wire shipments are extremely heavy for the season, but are tapering.

Nonferrous Metals

Export Sales of Copper Increase and Tin Prices Rise—New Buying of Mill Products Lags—Shipments Are Active

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Straits Tin New York Spot	Straits Tin New York Futures	Lead New York	Lead St. Louis	East Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
June 5	18.00	18.00	17.25	43.55	44.10	7.00	6.80	6.60	23.90	8.75	35.00
June 6	18.00	18.00	17.25	43.80	44.25	7.00	6.80	6.60	23.90	8.75	35.00
June 7	18.00	18.00	17.25	44.00	44.37½	7.00	6.80	6.60	23.90	8.87½	35.00
June 10	18.00	18.00	17.25	44.75	45.25	7.00	6.80	6.60	23.90	9.00	35.00
June 11	18.00	18.00	17.37½	44.56¼	45.18¾	7.00	6.80	6.62½	23.90	9.00	35.00

NEW YORK, June 11.—Increased export sales of copper and a rise of 1 cent in tin in the past week are outstanding features of the nonferrous metal market. Business in domestic copper and in other metals has been quiet.

Brass and copper mill products continue quiet on new sales but shipments still are close to capacity rates. New orders take mostly three to four weeks to run through the mills. More interest is being shown in copper wire. Prices are unchanged.

Copper—The domestic market is quiet and steady at 18.00c, Connecticut, with practically only custom smelters taking new orders. Some carlot business is being done every day, mostly for June and July shipment. Export sales in the past few days have been close to 2000 tons daily. Most of the buying is for June shipment and a little for July. The nonferrous scrap market is much stronger.

Zinc—Prime western continues quoted at a wide spread, with a few producers at 6.60c East St. Louis, and several asking 6.80c. Users appear to be well covered on immediate needs. The ore market is steady at $44 a ton. High grade zinc is steady, with shipments unusually large. Domestic shipments of all grades of zinc in May were larger than ever before in one month. Stocks were cut to the lowest level in more than two years.

Tin—The rapid rise in prices has been due to reports from London of the possibility of a world cartel of tin producers. Some students of the market remain skeptical as they have on former occasions. The price spread between spot and futures has widened. Good business has been done in all positions.

Lead—Business has been moderate, mostly for June shipment. Prices have been fairly steady though there has been a little shading of the St. Louis price.

Aluminum—Buying is light but shipments are large and prices are firm.—*Daily Metal Trade.*

Now Rolls Wider Sheets

Otis Steel Co., Cleveland, has started operations of its two recently widened sheet mills, increasing production of wide full finished sheets from 18,000 to 36,000 sheets weekly. Expansion in output resulted from the rising demand from automobile builders for autobody sheets up to 67 inches wide, making possible the stamping of a body from two or three sheets instead of six. The company's wide sheet mills are booked to capacity for an indefinite period.

Reliance Iron Works, Alhambra, Calif., is enlarging the capacity of its foundry, core room, and cleaning room.

Mill Products

Base price cents per pound f.o.b. mill, except where otherwise specified

SHEETS	
Yellow brass (high)	23.25
Copper, hot rolled	27.75
Lead, full sheets (cut ¼c more)	10.00
Zinc sheet (100-pound base)	$10.25
Zinc strip (100-pound base)	$9.25
Aluminum, flat sheets, up to 10 gage, 3 to 72 inches wide	31.30
SEAMLESS TUBE	
Yellow brass (high)	28.25
Copper	29.25
RODS	
Yellow brass (high, full turnings)	21.25
Naval brass	24.00
WIRE	
Copper	19.87½
Yellow brass (high)	23.75

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	12.00 to 12.50
Chicago	11.50
Cleveland	12.25 to 12.50
HEAVY YELLOW BRASS	
Cleveland	8.75 to 9.00
ZINC	
New York	3.50 to 3.75
Cleveland	3.25 to 3.50
HEAVY COPPER AND WIRE	
New York	14.00 to 14.25
Boston	13.00 to 13.50
Chicago	12.50
Cleveland	13.50 to 14.00
RED BRASS BORINGS	
New York	11.00 to 11.50
YELLOW BRASS TUBING	
Cleveland	8.50 to 9.00
LIGHT COPPER	
New York	12.00 to 12.25
Chicago	11.50
Cleveland	12.00 to 12.50
LIGHT BRASS	
Boston	7.00 to 7.50
Chicago	7.50
Cleveland	6.75 to 7.00
ALUMINUM	
Clippings, Cleveland	18.00 to 18.25
Borings, Cleveland	9.50 to 10.00
Cast Cleveland	12.50 to 12.75
Cast, Boston	10.50 to 11.00

Secondary Metals

Remelt aluminum No. 12	17.00 to 17.50
Brass ingot, 85-5-5-5	16.25 to 16.50

Coke By-Products

Production Is Being Moved—Prices Steady—Sulphate Buying Near

New York, June 11.—Strong demand continues for coke oven by-products at steady prices. Light oil distillates are moving close to production against contracts and a fair volume of new business also is being placed. Benzol, pure and 90 per cent, is firm at 23 cents per gallon, works, in tanks and small spot lots are moving slightly better than that figure.

Toluol is in active demand, with no large stocks accumulated. The price is steady at 40 cents per gallon at works in tanks. Solvent naphtha holds at 30 cents per gallon at producers' plants, as does commercial xylol in tanks. Export business in distillates is brisk and any supplies not taken in the domestic market are readily sold for export.

Some large consumers of phenol are paying 16 cents per pound at plants in 250-pound drums. Production is holding up and there is no surplus.

Naphthalene is being bought practically at the rate of production which continues high. Prices are unchanged. Sulphate of ammonia contracting is approaching for the fertilizer industry, with current stocks well cleared.

Coke Oven By-Products

Per Gallon at Producers' Plant in Tank Lots

	Spot
Pure Benzol	$0.23
90 per cent benzol	0.23
Toluol	0.40
Solvent naphtha	0.30
Commercial xylol	0.30
Per Pound at Producers' Plants in 250-Pound Drums	
Phenol	0.16 to 0.17
Per Pound at Producers' Plants	
Naphthalene flakes	0.05½ to 0.06½
Naphthalene balls	0.06½ to 0.07½
Per 100 Pounds Delivered	
Sulphate of ammonia	$2.20 to 2.30

Mercury $120 to $123

New York, June 11.—Quicksilver is unchanged at $121 to $123 a flask.

Warehouse

June Tonnage Slightly Under May—Recovery Expected Before Month Ends—Blue Annealed Sheet Base Gradually Lining Up

TONNAGE so far in June has fallen only slightly under the may rate, but jobbers hope before the month is out to show an aggregate movement comparable to May. By July 1 those sections which as yet have not taken action on the blue annealed sheet base will probably bring themselves into line.

New York—Demand holds to the recent brisk pace. No price changes are announced for third quarter but blue annealed sheets will be revised upward to meet recent mill extras, jobbers at other eastern points having taken such action. Structurals, bars and sheets lead in demand.

Buffalo—Warehouses report a good early June volume. The decline in orders, anticipated on account of heavy April and May purchases, is being deferred. Daily order mails hold up well. The quarter gives assurance of establishing an unusually heavy sales volume. Prices are unchanged.

Pittsburgh—Jobbers have adopted No. 13 gage as base for blue annealed sheets, quoting No. 10 gage material as blue annealed light plates. No. 10 gage continues 3.35c to 3.45c, with the price on No. 13 gage 3.60c. Sales are steady at about the May rate. Prices generally are firmly held.

Cincinnati—Structural shapes, plates and bars show fair activity from warehouses. Prices are steady.

Cleveland—A slight recession in tonnage is noted by jobbers handling the heavier rolled steel products. Orders too have declined in number. This has not been encountered, however, by sheet jobbers. The latter have taken no action on blue annealed sheet base but probably will follow warehouses in other sections of the country and adopt No. 13 gage as base for third quarter business. All prices are steady.

St. Louis—Warehousemen report a slowing down in business, due in large measure to the local building trades strike and the unfavorable weather. Sheets move well with the exception of galvanized. Activities in the new oil field at Dupo, Ill., across the river from south St. Louis, demand pipe, rods, bars, beams, etc.

Philadelphia—Jobbers have adopted dual basing on blue annealed sheets, quoting 3.25c, base delivered locally on No. 10 blue annealed plates and 3.40c, base, on No. 13 blue annealed sheets, mill extras and warehouse quantity differentials being added. They also have advanced hoops and bands 15 cents.

Warehouse Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Baltimore	3.25c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.00c
Ft. Worth	3.75c
Houston	3.00c
Los Angeles	3.30c
New York †††‡	3.25c
Philadelphia*	2.80c
Pittsburgh	2.90c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.15c
St. Paul	3.25c
Tulsa	3.75c to 4.04c

IRON BARS

Baltimore	3.25c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.00c
Ft. Worth	3.75c
New York††	2.80c to 3.24c
Philadelphia*	2.80c
St. Louis	3.15c
Tulsa	3.75c to 4.04c

REINFORCING BARS

Baltimore	3.31c
Boston	3.265c to 3.50c
Buffalo	2.95c
Cincinnati	3.15c
Cleveland	2.25c to 2.44c
Detroit	2.30c to 3.00c
Ft. Worth	3.50c
Houston	3.00c
Los Angeles cl.	2.65c
Los Angeles, lcl.	3.00c
New York	2.90c to 3.30c
Philadelphia	2.75c to 3.10c
Pittsburgh	2.90c to 3.175c
San Francisco cl.	2.00c
San Francisco lcl.	2.25c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.75c to 4.00c
Youngstown	2.30c to 2.60c

STRUCTURAL SHAPES

Baltimore	3.25c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.10c
Ft. Worth	4.00c
Houston	3.25c
Los Angeles	3.30c
New York †††‡	3.25c to 3.30c
Philadelphia*	2.70c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.14c

PLATES

Baltimore	3.25c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-in. and thicker	3.00c
Cleve., 3/16-in.	3.20c
Detroit	3.10c
Detroit, 3/16-in.	3.30c
Ft. Worth	4.00c
Houston	3.00c
Los Angeles	3.30c
New York‡‡	3.30c
Philadelphia*	2.70c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.14c

NO. 10 BLUE ANNEALED

Baltimore	3.60c
Boston 3/16-in.	3.915c
Buffalo	3.50c
Chicago	3.35c
Cincinnati	3.45c
Cleveland	3.25c
Detroit	3.35c
Ft. Worth	4.50c
Houston	3.90c
Los Angeles	4.00c
New York‡‡	3.70c to 3.90c
Portland	3.75c
Philadelphia*†	3.25c
Pittsburgh**	3.35c to 3.45c
San Francisco	3.80c
Seattle	4.00c
St. Louis	3.45c
St. Paul	3.75c
Tulsa	4.20c to 4.34c

NO. 24 BLACK SHEETS

Baltimore	3.50c to 4.00c
Boston	4.85c
Buffalo	4.20c
Chicago	4.05c
Cincinnati	4.05c
Cleveland***	3.90c
Detroit	3.95c
Ft. Worth	4.70c
Los Angeles	4.90c
New York	4.00c
Philadelphia*†	4.10c
Pittsburgh**	3.85c
Portland	4.90c
San Francisco	4.90c
Seattle	5.00c
St. Louis	4.25c
St. Paul	3.89c
Tulsa	4.34c

NO. 24 GALVANIZED SHEETS

Baltimore	4.30c to 4.50c
Boston	5.60c
Buffalo	4.70c to 4.85c
Chicago	4.90c
Cincinnati	4.90c
Cleveland***	4.75c
Detroit	4.75c
Ft. Worth	5.50c
Houston	5.30c
Los Angeles	5.30c
New York	4.75c
Philadelphia*†	4.85c
Pittsburgh**	4.85c to 4.95c
Portland	5.50c
San Francisco	5.30c
Seattle	5.50c
St. Louis	5.10c
St. Paul	4.68c
Tulsa	5.10c to 5.35c

BANDS

Baltimore	4.00c
Boston	4.015c to 5.00c
Buffalo	3.65c
Chicago	3.20c
Cincinnati	3.50c
Cleveland	3.25c to 3.65c
Detroit, 3/16-in. and lighter	3.30c
Ft. Worth	4.25c
Houston	3.65c
Los Angeles	4.15c
New York‡‡	3.75c
Philadelphia*	3.30c
Pittsburgh	3.25c
Portland	4.00c
San Francisco	3.75c
Seattle	4.00c
St. Paul	3.50c
Tulsa	4.50c to 4.69c

HOOPS

Baltimore	4.00c
Boston	5.50c to 6.00c
Buffalo	4.05c
Chicago	3.75c
Cincinnati	4.05c
Cleveland	3.25c to 3.65c
Detroit, No. 14 and lighter	3.80c
New York‡‡	4.25c
Philadelphia*	3.55c
Pittsburgh	4.25c
Seattle	5.00c
St. Paul	4.00c

COLD FINISHED STEEL

	Rounds, hexagons, squares	Flats, squares
Baltimore (c)	3.50c	(a) 4.00c
Boston	3.55c	4.05c
Buffalo	3.95c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.65c	4.15c
Detroit	3.85c	4.35c
Los Angeles (a)	4.50c	.....
New York	3.60c	4.10c
Philadelphia*	3.60c	4.10c
Pittsburgh	3.70c	4.20c
Portland (a)	4.50c	.....
San Fran. (a)	4.25c	.....
Seattle (a)	5.00c	.....
St. Paul (a)	3.85c	.....
Tulsa	4.64c	5.14c

(a) Rounds only.

COLD ROLLED STRIP

Boston, 0.100-inch, 500 pound lots	5.30c
Buffalo	5.85c
Chicago (b)	6.10c
Cincinnati	7.15c
Cleveland (b)	5.95c
Detroit	5.80c
New York	5.15c
Philadelphia (c)	5.15c

(b) Net base, straightening, cutting, boxing 1 ton or more.
(c) Plus mill, size and quantity extras.

SWEDISH IRON AND STEEL
New York duty paid

Hollow drill steel	13.00c
Iron bars, round	6.10c
Iron bars, flats and squares	6.50c

*Plus quantity differentials. ‡‡Minus quantity differentials. ††Domestic bars. **Less than 25 sheets. *† 50 or more bundles. ***Less 0.15c where more than 10 bundles are ordered at once for delivery at one time.

Pacific Coast

Fairly Active Demand Continues—Slow Eastern Deliveries Help Coast Mills

WHILE buying of iron and steel materials on the coast is somewhat less than formerly and small lots are the rule, sufficient large projects are under consideration to furnish a comfortable continuing tonnage for the future. Prices are firm and delayed deliveries by eastern mills help coast producers in booking orders. Warehouse sales are heavy.

San Francisco, June 8.—(*By Air Mail*)—Although demand for steel products is not as strong as a month ago, some large awards were reported this week and a large number of new prospects are scheduled to come out for figures the next 60 days.

Building activity is holding up well. Permits issued in San Francisco during May totaled $4,307,352, compared with $2,635,116 for the corresponding period in 1928.

Pig Iron and Coke

Little of importance has occurred in the Coast markets for foundry pig iron and foundry coke, most consumers still having fair stocks in foundry yards. No large inquiries or sales were reported. Prices continue unchanged.

Coast Pig Iron Prices

Utah basic	$25.00 to 26.00
Utah foundry	25.00 to 26.00
*German	24.25
*Indian	25.00 to 26.00

*C.i.f. duty paid.

Bars, Plates and Shapes

Awards of concrete bars this week aggregated 1198 tons. Numerous small lettings were reported, ranging from 20 to 80 tons. Highway projects in California and bridge jobs, up for figures and pending will require more than 1700 tons. Movement of merchant bar material continues to be confined to small lots of numerous sizes. On this class of material 2.35c, c.i.f., is firm.

Plate awards this week totaled 1329 tons. No changes in quotations have occurred and 2.35c, c.i.f., continues firm.

Structural steel shape lettings were the heaviest in over a month and totaled 6013 tons. So far this year 97,493 tons have been placed, compared with 70,539 tons for the corresponding period in 1928. Bethlehem Steel Co. took over 200 tons for a wharf at Ventura, Calif., for the General Petroleum Corp. Other awards included 150 tons for a factory in San Francisco, placed with the Western Iron Works, and 240 tons for a machine shop for the Southern Pacific Co., San Francisco, secured by the Consolidated Steel Corp. A fair tonnage of business is pending and includes 630 tons for a bridge over the Salinas river and 435 tons for a bridge over the Trinity river, both in California. The Consolidated Steel Corp. is low bidder on 2000 tons for the Southern California Edison Co. building, Los Angeles. Prices remain firm at 2.35c, c.i.f., on plain structural shapes.

Other Finished Material

Demand for cast iron pipe has improved recently and awards this week aggregated 3027 tons, the highest weekly total in nearly two months. The United States Pipe & Foundry Co. took 2398 tons for Long Beach. New inquiries include 200 tons for Alhambra, Calif., and 208 tons for a street improvement project in Los Angeles. Bids were opened this week on 180 tons of standard black pipe for the La Canada irrigation district, La Canada, Calif. The Ducommun Corp., Los Angeles, was low bidder. No large pipe line inquiries are up for figures in this section.

Large Contracts Near

Seattle, June 5.—Iron and steel market conditions in the Pacific Northwest are generally satisfactory. Prices are holding firm and there is a steady demand for the more important items. Several large contracts are pending.

Considerable activity is soon to develop on the Olympic peninsula with railroad extensions planned both from the north and south. In the same territory several logging railroad extensions are under way and oil exploration is being pushed.

Awards of reinforcing, structurals and plates this week, in lots of more than 100 tons, total more than 1200 tons.

Bars, Plates and Shapes

Mill prices of finished steel are unchanged at 2.35c, the market holding firm and steady although buying continues on a moderate scale. Reinforcing steel remains at 2.30c.

The two local steel mills report unchanged operations, with a fair run of reinforcing work, mostly in small tonnages, lots of 40 to 60 tons predominating. This week the Pacific Coast Steel Co. booked 500 tons for the second unit of the Shuffleton power plant, 200 tons for a warehouse for D. N. & E. Walter Co. and the addition to the Garfield high school. Tonnage pending totals more than 4000 tons.

Steel pipe won out over cast iron at Walla Walla where a contract has been awarded for 11,000 feet. The pipe, involving about 325 tons of plates, will be furnished by the Beall Pipe & Tank Corp., Portland, on a low bid of $35,538. Vancouver, B. C., will open bids June 18 for 76,850 feet of 26, 32 and 36-inch riveted steel pipe, with alternates for welded or lock bar.

The only structural contract for more than 100 tons this week went to the Wallace Bridge & Structural Steel Co., 200 tons for a bridge across the Quinault river for the Polson Logging Co. Pacific Car & Foundry Co. booked a small job for the Junior high school at Port Townsend.

Finished Materials

Jobbing houses report a good volume of business, buying being spread over a wide assortment. Mill buying is not so brisk but deliveries from eastern mills are slow. Building materials are in good demand while light plates, bars and shapes are also moving actively. Prices are unchanged and apparently are being well maintained.

Cast iron pipe agencies have booked a number of municipal and private jobs recently in lots of less than 100 tons. Several large jobs are to be awarded soon, including the inquiry of Vancouver, B. C., for a considerable quantity of various size pipe. The same city will open bids June 10 for 200 hydrants and a quantity of valves. American Cast Iron Pipe Co. is completing delivery at Vancouver, Wash., of 800 tons of large size main, for rebuilding the water system. Much of this material is cement lined, a new feature on the Pacific Coast.

Old Materials

The scrap market is unchanged with local mills paying $10 and $11, gross, for steel scrap and exporting houses ready to buy desirable tonnages for Japanese interests. Cast iron scrap is quoted nominally at $14, net.

Chicago Strike Settled

Chicago, June 11.—Building work throughout the Chicago industrial area is being resumed following settlement of the strike of union structural steel workers. The strike continued four and one-half days. Negotiations have been in progress for settlement of the ornamental iron workers' strike.

The Building Construction Employers' association granted structural steel workers' demand for a wage increase from $12 to $13 for an 8-hour day. The hourly rate is $1.62½. The agreement will expire June 1, 1930. A number of large building projects had been tied up, including the Chicago Merchandise Mart, the Chicago Civic Opera building, and a number of industrial and bridge projects.

Port Colborne Stack In

The Canadian Furnace Co., Ltd., Port Colborne, Ont., has blown in its Victoria furnace, out for relining and repairs. The capacity of the furnace has been increased to 500 tons daily.

Foundry Party Completes Preconvention Tour

London, June 11.—(*By Cable*)—During the final days of the preconvention tour, the 60 American and Continental members of the party visiting England and Scotland prior to attending the third International Foundrymen's congress here, June 11-15, continued to be entertained extensively by their hosts. As announced in the June 4 issue of IRON TRADE REVIEW, the party spent June 2-4 in Glasgow. Arriving in Edinburgh on June 5, the visitors were entertained by the Scottish branch of the Institute of British Foundrymen.

A number of foundries and industrial plants were visited in Newcastle-Upon-Tyne on June 6. At a luncheon served in honor of the party the speakers were Fred Erb, president-elect, American Foundrymen's association, and Dan M. Avey, editor, *The Foundry*, Cleveland. A reception in Cutlers hall featured arrival of the guests in Sheffield on June 7. At a luncheon served on the following day, the Lord Mayor extended greetings and S. T. Johnston and S. W. Utley, president and past president, respectively, American Foundrymen's association, responded.

The party returned to London June 9 to remain for the opening of the congress. Wesley Lambert, the new president of the Institute of British Foundrymen, traveled with the party throughout the entire preconvention tour as a special courtesy to the visitors.

Bar Iron and Sheet Wage Schedules Reaffirmed

Representatives of independent bar iron, sheet and tin plate mills having wage scale contracts with the Amalgamated Association of Iron, Steel and Tin Workers have renewed the agreements for the year beginning July 1 on the same basis as during the past year. Conferences were held recently in Atlantic City, N. J. While it was reported the bar iron workers would ask for advances in base rates, friendly discussion resulted in confirmation of the former contract.

End Bethlehem Case?

Washington, June 11.—The federal trade commission is expected to act in the next week or two on its complaint against the Bethlehem Steel Corp., involving the acquisition of the Midvale and the Lackawanna properties. Officials of the commission, pending definite action, refuse to discuss whether the corporation is to sign a stipulation or whether the entire case is to be dismissed. It will be recalled that the United States Supreme Court decision in the Eastman Kodak case has affected the Bethlehem case.

Iron Ore

Movement Is Heavy—Little Delay Expected in Shipments from Mesabi

IRON ORE PRICES, PAGE 1618

Cleveland, June 11.—Loadings of Lake Superior iron ore are heavy, while the market is quiet, with the season's requirements under contract. Late reports from the Mesabi range indicate the floods this week were not as serious as at first indicated, and not much delay is anticipated in shipments from that range. The steamer Harry Coulby of the Interlake Steamship Co. brought to Cleveland last week the largest tonnage of iron ore ever carried to a lower lake port in one cargo, 14,441 tons. The Lake Superior Iron Ore association reports the following receipts at Lake Erie ports for this season to June 1, and shipments therefrom to interior furnaces:

Port	Receipts	Shipments	Dock balance June 1, 1929
Buffalo	776,163	43,140	1,656
Erie	222,341	229,750	55,101
Conneaut	1,557,992	1,625,373	1,269,344
Ashtabula	1,747,136	1,879,100	1,174,568
Fairport	331,067	337,277	193,740
Cleveland	1,921,980	1,678,370	747,737
Lorain	747,525	416,087	59,579
Huron	300,739	306,639	335,428
Toledo	339,406	214,758	34,438
Total	7,944,349	6,730,494	3,871,191
Comparative 1 year ago	2,848,088	2,804,848	4,934,564

Following are the receipts at other than Lake Erie ports for the season to June 1:

Port	Receipts
Detroit	123,555
Indiana Harbor	475,869
Gary	860,022
South Chicago	1,318,372
Milwaukee	.....
Boyne City	.....
East Jordan	.....
Sault Ste. Marie, Ontario	.....
Point Edward, Ontario	67,695
Total	2,913,557
Comparative 1 year ago	1,522,964

Alloy Steel

Specifications Taper—2.65c Is Third Quarter Base

Detroit, June 11.—Alloy steel requirements of users in this district, especially in the automotive industry, are sympathetic to the curtailment of assembly schedules by all but three or four of the larger interests. For the season, however, shipments are high. Third quarter contracts are carrying an alloy quality bar base of 2.65c, mill.

Olds Motor Works, Lansing, Mich., has awarded the contract for a plant.

Operating Rates

Chicago Continues 98, Pittsburgh at 95, Valley Holds High Rate

Chicago—Ingot production continues at about 98 per cent, or close to rated capacity. Much needed repairs to open-hearth furnaces have been in progress, and it is indicated that conditions of equipment should prevent little interruption. Twenty-nine of the 36 steelworks furnaces in the district are active. The leading interest has 20 of its 27 steelworks stacks blowing. Sheet mill operations have been slightly reduced to 75 to 80 per cent. Bar and plate mill operations continue near capacity. A slight reduction has been shown in the hot rolled strip mill rate. Cold rolled strip and wire mill operations are 70 to 75 per cent.

Pittsburgh—Steel producers are encountering more difficulty in maintaining operations of open-hearth furnaces, an increasing number being down for repairs. Units are being placed in operation as soon as possible, however, and increased bessemer production is offsetting the greater portion of this loss. As a result, producers are able to continue production close to 95 per cent. Finishing operations are little changed, strip mills holding at capacity with tin plate off slightly at 85 to 90 per cent; sheet mills continue 95 to 100 per cent; pipe mill operations vary from 60 to 70 per cent for welded and 70 to 90 per cent for seamless.

Buffalo—Open-hearth operations continue at practical capacity, 33 of 37 units being engaged in production this week. Blast furnace operation shows no change with 14 of 18 modern stacks in the district in blast.

Youngstown, O.—Steel mills in the Mahoning valley have gone through the first ten days of June with no appreciable let-up in the high operating rate which in May set a new record. A June record now appears in prospect. Of the 51 independent open-hearth furnaces, 47 are scheduled for operation this week. This compares with 48 in operation last week as against 34 a year ago. Idle furnaces are undergoing repairs. The average for both independent and Steel corporation plants is about 90 per cent. Independent sheet mills are close to 96 per cent while tin plate production is slightly lower with ten Liberty mills idle. Strip mills continue at capacity. Corporation tin plate mills are operating at 90 per cent, slightly lower than in May. Pipe production is rising, following recent distribution of good orders. Of the 20 seamless and welding units, 12 are scheduled. Steel corporation bar production continues at 90 and independents average 80 per cent. District steel fabricators continue on full capacity schedules.

Eastern Tonnage Record

Eastern Rolling Mill Co., Baltimore, has declared the regular quarterly dividend of 37½ cents on its common stock. May tonnage of the company was a record, as was output for the first five months of 1929.

Manganese Fight To Mark Senate Tariff Hearings Beginning June 24

WASHINGTON, June 11.—Senator Smoot, of Utah, chairman of the finance committee, which handles tariff matters in the upper house of congress, has announced that hearings before a subcommittee on the metal schedule will begin June 24. This date will hold good unless hearings on other schedules on previous dates are prolonged.

Members of the subcommittee on schedule 3, metals, include Senator Reed of Pennsylvania, chairman; and Senators Smoot of Utah, Edge of New Jersey, King of Utah, and Barkley of Kentucky.

It is quite evident there is going to be a more determined fight in the senate than there was in the house over the manganese situation. The steel mills, on the one hand, will make every effort to have manganese put on the free list while domestic manganese producers are going to make an equally determined effort to have a higher rate put in the bill than that allowed by the house.

In this connection, Senator Oddie of Nevada has already introduced an amendment in the senate providing for a duty on manganese on a sliding scale.

The amendment provides that manganese ore or concentrated of all kinds, containing less than 10 per cent metallic manganese shall be admitted free of duty. However, the one containing 10 per cent or more of metallic manganese and less than 20 per cent, shall be dutiable at ½-cent per pound on the metallic content contained there; that containing 20 per cent or more metallic manganese and less than 25 per cent, shall be dutiable at 1 cent per pound and that containing 25 per cent or more content shall be dutiable at 1½ cents per pound. The amendment has been referred to the subcommittee of the finance committee. Senator Oddie says:

Since the last tariff act was passed in 1922 the department of agriculture has conducted experiments on a practical scale and demonstrated the value of manganese ores for fertilizer. In urging adoption of this amendment at this time Senator Oddie believes it is strictly in line with the administration's program in confining the present tariff bill primarily to the needs of the agricultural and livestock industries. It is not generally known that there are manganese deposits in 35 states, including those upon which the nation is depending most largely for agricultural output.

If the domestic manganese industry can receive the benefit of the tariff provided in the resolution, the American farmers would be able to obtain this valuable fertilizer as a by-product, which would be delivered to the farmers, particularly in the interior of the country, at much less than products from ores of foreign origin.

The military and naval defense of the nation also is dependent upon a highly developed manganese industry of the United States. This country should no longer be compelled to rely upon the manganese ores of Russia or any other foreign country.

The opposition of the steel industry is difficult to understand, for the reason that that industry is dependent very largely upon the domestic market and is now benefiting by the protection in the present tariff act. It would seem inconsistent, therefore, that the steel industry would deny to the manganese producers of the United States the small degree of protection which would be afforded by this amendment.

Convention Calendar

June 11-15—Third International Foundrymen's congress. Royal Agricultural Hall, London. T. Makemson, St. John Street Chambers, Deansgate, Manchester, England, is secretary.

June 24-27—American Society of Mechanical Engineers. Second national meeting of oil and gas power division at Pennsylvania State college, State College, Pa. Prof F. G. Hechler, State College, Pa., is secretary.

June 24-27—Sheet Steel Executives. Annual conference at Hotel Greenbriar, White Sulphur Springs, W. Va. A. N. Flora, 511 Terminal Tower, Cleveland, is secretary.

June 24-28—American Society for Testing Materials. Thirty-second annual meeting at Chalfonte-Haddon Hall, Atlantic City, N. J. C. L. Warwick, 1315 Spruce street, Philadelphia, is secretary.

July 1-4—American Society of Mechanical Engineers. Summer meeting at Salt Lake City, Utah. Calvin W. Rice, 29 West Thirty-ninth street, New York, is secretary.

Sept. 9-12—American Welding society. Annual fall meeting at Hotel Statler, Cleveland. M. M. Kelly, 33 West Thirty-ninth street, New York, is secretary.

Sept. 9-12—American Institute of Mining and Metallurgical Engineers. Meeting of iron and steel division at Hotel Cleveland, Cleveland. H. Foster Bain, 29 West Thirty-ninth street, New York, is secretary.

Sept. 9-12—American Institute of Mining and Metallurgical Engineers. Meeting of institute of metals division at Hotel Cleveland, Cleveland. W. M. Corse, 810 Eighteenth street, Washington, is secretary.

Sept. 9-13—American Society for Steel Treating. Eleventh annual convention and national metal exposition at Public auditorium, Cleveland. Headquarters at Hotel Cleveland. W. H. Eisenman, 7016 Euclid avenue, Cleveland, is secretary.

Sept. 10-13—Iron and Steel institute (Great Britain). Autumn meeting at Newcastle-on-Tyne, England. G. C. Lloyd, 28 Victoria street, London, S.W.1, is secretary.

Sept. 11-13—American Society of Mechanical Engineers. Meeting of iron and steel division at Hollenden hotel, Cleveland. P. T. Wetter, 29 West Thirty-ninth street, New York, is secretary.

Sept. 30-Oct. 4—National Machine Tool Builders' association. Second national machine tool exposition at Public auditorium, Cleveland. E. F. DuBrul, 321 Provident Bank building, Cincinnati, is secretary.

Sept. 30-Oct. 4—National Safety council. Eighteenth annual meeting at Chicago. William H. Cameron, 108 East Ohio street, Chicago, is managing director.

Oct. 2-4—Society of Automotive Engineers. Production meeting at Hotel Cleveland, Cleveland. Coker F. Clarkson, 29 West Thirty-ninth street, New York, is secretary.

Oct. 7-10—American Society of Mechanical Engineers. Third national fuels division meeting in Philadelphia. Calvin W. Rice, 29 West Thirty-ninth street, New York, is secretary.

Plans Are Maturing for Metals Congress

Plans rapidly are nearing completion for the first annual Metals congress to be held in Cleveland, Sept. 9-13. To a considerable extent this congress is an outgrowth of the conventions and expositions of the American Society for Steel Treating with which several other technical organizations have co-operated in late years. The congress will open simultaneously with the eleventh annual meeting of the Steel Treating society.

Coincidental will be the national fall meeting of the American Welding society, national fall meeting of the Institute of Metal division of the American Institute of Mining and Metallurgical Engineers, national fall meeting of the Iron and Steel division of the American Society of Mechanical Engineers and national fall meeting of the Iron and Steel division of the American Institute of Mining and Metallurgical Engineers.

In addition to the Metals congress, which without doubt will be the foremost of metals gatherings, there will be assembled in Public auditorium the annual exposition featuring modern types of metalworking machinery and equipment. More than 200 exhibitors already have engaged display space.

Details of technical programs are being worked out and will be announced shortly. W. H. Eisenman, 7016 Euclid avenue, Cleveland, is secretary of the American Society for Steel Treating and also manager of the metals exposition.

Metal Lath Makers To Discuss Code

Washington, June 11.—The metal lath industry will hold a trade practice conference here, June 27, at the United States chamber of commerce with Commissioner William E. Humphrey presiding.

Among practices to be taken up by the metal lath industry are inducing breach of contract, secret rebates, blanket contracts, enticement of employes, threats of suit for patent or trade mark infringement, defamation of competitors, and guaranteed prices against decline or advance.

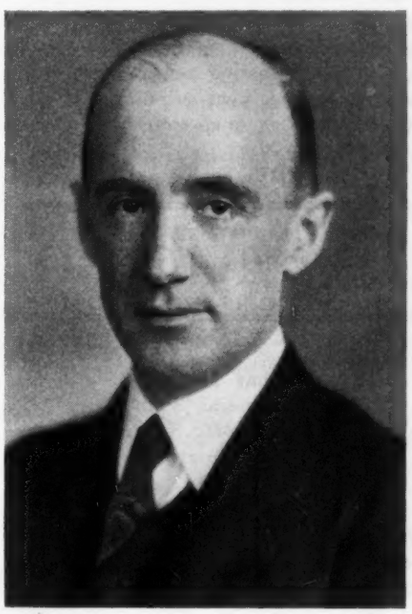
Industrial Men in the Day's News

George R. Hanks, President, Taylor-Wharton Iron & Steel Co., High Bridge, N. J.

AT 39 years of age he heads the oldest iron and steel company in America, operating continuously at High Bridge, N. J., for 187 years.

FROM drafting room to president's chair in less than 14 years marks the remarkable rise of this latest recruit to the ranks of young steel company executives.

TRAINED for war service at Plattsburg, he was recalled to High Bridge to take charge of casting production for steel helmets, gun carriages, etc.



BY HIS recent election to the presidency of the Taylor-Wharton Iron & Steel Co., High Bridge, N. J., George R. Hanks becomes the leading figure in the oldest company in the iron and steel business in the country. For 187 years, or since 1742, this company has been producing iron and steel at High Bridge. It not only is the oldest company in this industry but is also the second oldest concern with a continuous history in the western hemisphere, being antedated only by the Hudson Bay Co.

Mr. Hanks takes over the post of president at the age of 39, and with a thorough experience in all phases of the company's business. He was born at McConnellsburg, Pa., but shortly afterward the family moved to Chambersburg, Pa., where he graduated from high school in 1906. He went to Philadelphia where he took a course in business and secretarial work at the Peirce school. In the spring of 1907 he went in a clerical capacity with the Fourth Street National Bank, Philadelphia. He decided to further his education and in 1909 entered Mercersburg academy, graduating in 1911. He then entered Princeton university, where he studied civil engineering and where he was active in numerous extra-curricular activities.

There Mr. Hanks attracted the notice of the late Knox Taylor, a trustee of Princeton and then president of the Taylor-Wharton Iron & Steel Co. An invitation by Mr. Taylor, upon Mr. Hanks' graduation in 1915, resulted in the latter's since unbroken connection with the Taylor-Wharton organization.

Mr. Hanks went in 1915 to the drafting room of William Wharton Jr. & Co., Philadelphia, the Taylor-Wharton company's trackwork subsidiary. He soon was moved through the grinding, machine and foundry departments at the William Wharton Jr. plant, and was appointed inspector of assembled trackwork. He continued this work at Easton when, in 1916, William Wharton Jr. & Co. moved there and discontinued its original plants in Philadelphia. The same year Mr. Hanks was transferred to High Bridge, where he was employed as a molder's helper. Later he was shifted to the engineering department and soon was made assistant mechanical engineer and then mechanical engineer.

Later in 1916 and in 1917 Mr. Hanks took the training course at Plattsburg, N. Y., with expectation of seeing service in Europe. However, he was recalled to High Bridge where he was given charge of the foundry which at that time was producing various castings for war purposes, particularly manganese steel helmets and castings for gun carriages.

In 1921 Mr. Hanks was appointed superintendent of the High Bridge plant. In 1925 he was shifted to the sales department, and shortly thereafter was made vice president in charge of both sales and manufacturing for the Taylor-Wharton Iron & Steel Co. and its subsidiaries. On May 24 he was elected president of the company, to take effect July 1, succeeding Percival Chrystie, who resigns after 40 years of continuous service.

The Taylor-Wharton Iron & Steel Co. has its plant and headquarters at High Bridge, while its subsidiaries are at Easton, Pa. Consolidated into the operations of Wm.

Wharton Jr. & Co. are the Tioga Steel & Iron Co. and the Philadelphia Roll & Machine Co.

At High Bridge the principal activity is the production of track work and other castings made from 12 per cent manganese steel as developed by Sir Robert Hadfield. Manganese steel castings have been produced continuously at High Bridge since Oct. 29, 1892. At Philadelphia the Tioga Steel & Iron Co., a subsidiary, produced in 1916 the first cylinders placed in airplane engines by the Wright Aeronautical Corp. The manufacture of airplane engine forgings is now an important activity of the company, and its forgings were in the plane which Commander Byrd flew over the North Pole and also in the plane in which Colonel Lindbergh crossed the Atlantic. The plant at Easton makes seamless gas cylinders, alloy steel castings, speed-boats, grinding balls, rug looms and other products. An interesting new product of the Easton plant is a new type of pigment grinding mill which makes it possible to manufacture inks exactly to formulae.

An interesting feature of the company's history is its close identification for many years past with some of the country's foremost metallurgists and enginneers. The late Dr. Henry M. Howe was vice president, and its organization has embraced such figures as Henry D. Hibbard, Frank C. Roberts, Maunsel White and others. John Howe Hall, the company's metallurgist, is internationally known.

Mr. Hanks also is president of the Linn Mfg. Corp., Morris, N. Y., subsidiary of the LaFrance-Republic Corp. The Linn corporation produces tractors requiring large tonnages of manganese steel castings. He is a member of the American Society of Mechanical Engineers, the American Institute of Mining and Metallurgical Engineers and the Princeton Engineering association. Mr. Hanks resides at Clinton, N. J., where he is a member of the town council, and where he is a trustee of the Clinton Presbyterian church and also of the Hunterdon Country club.

Men of the Industry

JOHN L. CONNORS has been appointed assistant general manager of the Jeffrey Mfg. Co., Columbus, O. He was born in that city and formerly was engaged in business there but for the past nine years he has been president of the Morgan-Gardner Electric Co., Chicago. He was educated at Ohio State and Purdue universities, graduating in 1905 from the latter school. In his new field of endeavor, Mr. Connors will have special duties and responsibilities in connection with the management of the British Jeffrey-Diamond Ltd., Wakefield, England, the Jeffrey Mfg. Co. Ltd., Montreal, and the Galion Iron Works & Mfg. Co., Galion, O., all subsidiaries of the Jeffrey Mfg. Co.

* * *

C. A. Porrman recently was promoted from general superintendent to plant manager of the Oliver Chilled Plow Works, South Bend, Ind.

* * *

C. A. Anderson has been appointed sales manager of the Ford Chain Block Co., with headquarters at the general offices and works, Second and Diamond streets, Philadelphia.

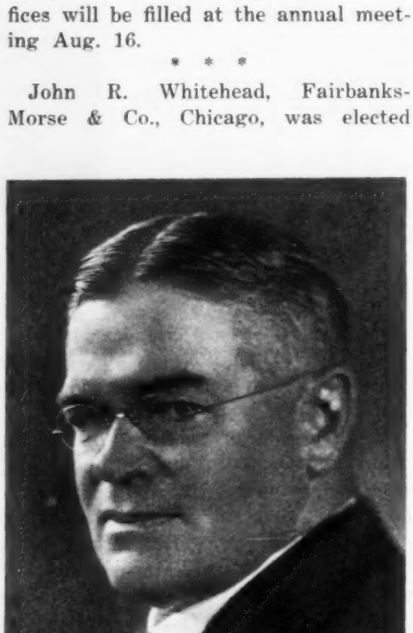
* * *

A. M. Foster retired May 31 from the presidency of the Foster Bolt & Nut Mfg. Co., Cleveland, and was elected chairman of the board of directors.

J. F. Donahue, formerly vice president and general manager, was elected president to succeed Mr. Foster. No successor has been appointed as yet to A. L. Empey, secretary and treasurer, who died recently, but his offices will be filled at the annual meeting Aug. 16.

* * *

John R. Whitehead, Fairbanks-Morse & Co., Chicago, was elected president of the National Association of Purchaing Agents at its annual directors' meeting at Buffalo, June 6.



J. S. TRITLE.

Who, as noted in IRON TRADE REVIEW of June 6, was made vice president of Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

* * *

J. F. Hahn has been made vice president and treasurer in charge of finance of the National Enameling & Stamping Co. Inc., St. Louis. Thomas W. Gulley has been elected vice president in charge of sales. Both Mr. Hahn and Mr. Gulley have been identified with the company for a number of years.

* * *

I. Lamson Jennings, vice president of Lamson & Sessions Co., Cleveland, and W. H. Gerhauser, president of the American Shipbuilding Co., Cleveland, were added to the board of directors of the Union Savings & Loan Co., Cleveland, June 4.

* * *

T. F. Smith, formerly with the Dunham Co., Berea, O., has become affiliated with the Clover Foundry Co., Eleventh and Western avenues, Muskegon, Mich. He was placed in complete charge of the Clover foundry June 1.

* * *

W. G. Hume, formerly general sales manager of the Keystone Steel & Wire Co. of Peoria, Ill., was elected vice president of the Northwestern Barb Wire Co., Sterling, Ill., manufacturer of wire products, effective May 31.

* * *

R. W. Shindler, formerly vice president, has been elected president and treasurer of the Quaker City Stencil & Stamp Works, 234 Arch street, Philadelphia, to succeed the late C. L. Hazzard.

F. Albert Talley Jr., formerly secretary, now is secretary and assistant treasurer.

* * *

Frank Walker Caldwell has been placed in charge of engineering for

the Standard Steel Propeller Co., Homestead, Pa. He has had wide experience in government service. During the war Mr. Caldwell designed the wooden propellers used by army and navy planes and originated the type propeller manufactured by the Standard company.

* * *

G. M. Hoff, who for seven years has been general foundry foreman of the Columbia Steel Corp., Pittsburg, Calif., recently was appointed superintendent of the foundry departments. Mr. Hoff became connected with the Columbia corporation in 1918 and previous to that time was with the Wheeling Mold & Foundry Co., Wheeling, W. Va. The Columbia corporation operates one of the large steel foundries in the west, specializing in car, marine, hydroelectric and rolling mill castings.

* * *

Louis G. Randall has been appointed general factory manager of the Standard AirCraft Corp., Paterson, N. J. He formerly was engaged at Washington in the inspection division of the air corps, United States army, as management engineer. In 1917 he entered the aircraft business with the Standard Aero Corp., New York, as assistant superintendent of factories at Plainfield, N. J. In four months he was promoted to be superintendent and within six months was made general manager.

* * *

Niles E. Wallen has been made sales production manager in charge of advertising and export trade of the Dudlo Mfg. Co., Fort Wayne, Ind. He succeeds William S. Mossman, who resigned recently. Mr. Wallen has been with the company for eight years in the sales department.

Perry Cooper is scheduled to join the company shortly and will take over the Indiana and Michigan sales territory, part of which has been covered by Mr. Wallen.

* * *

Frank B. Common, who, as noted briefly in IRON TRADE REVIEW of June 6, was elected president of the Lake Superior Corp., Montreal, to succeed Robert Dodd, who retired recently on account of poor health, has been practising law with Brown, Montgomery & McMichael, advocates, Royal Bank building, Montreal, since he was called to the bar of Quebec in 1917. He was born Nov. 26, 1891 in Montreal and was educated at Montreal high school and McGill university, Toronto. He was graduated from the latter in 1913 with a B.A. degree and was granted his M.A. degree one year later. In 1917 he was granted a B.C.L. degree by McGill and the same year was made a gold medalist. He then read law with Brown, Montgomery & McMichael until 1917, when he entered the legal profession.

* * *

C. E. Shomo has been made general manager of the Majestic Steel Cabinet Co., 4217 Belle Plaine avenue, Chicago.

* * *

Harry Loeb, who, as announced in IRON TRADE REVIEW May 30, was recently elected president of the Master Boiler Makers Supply Men's association, has been a well known figure in the eastern plate trade for a long time. A native of Philadelphia, he became identified with the Philadelphia sales office of the Lukens Steel

HARRY LOEB

Co. in 1905. In 1926 he was transferred to New York and now is manager of sales in that territory for the Lukens Steel Co.

* * *

F. E. Humphrey, manager of the metals coating department of the Witt-Humphrey Steel Co., Greensburg, Pa., recently was made assistant to the general manager, L. R. Foust.

* * *

W. S. Saunders, formerly vice president and general manager of the American Forging & Socket Co., Pontiac, Mich., has been elected president to succeed the late C. M. Crofoot. Mr. Saunders has been affiliated with the company for 14 years.

* * *

H. E. Harvey, general superintendent of the Cleveland and Detroit plants of Steel & Tubes Inc., subsidiary of the Republic Iron & Steel Co., Youngstown, O., has been promoted to be works manager, with supervision of the Brooklyn, N. Y., plant as well. This step was taken to coordinate manufacturing activities at all three plants.

H. J. Kaighin, superintendent of the Detroit plant, has been transferred to be superintendent at Brooklyn.

Edward Kamper, superintendent at Cleveland, has been transferred to discharge similar duties at Detroit.

D. W. Colvin, assistant superintendent and chief engineer, has been promoted to succeed Mr. Kamper as superintendent at Cleveland.

* * *

Frederick W. Boynton, formerly purchasing agent for the Packard Motor Car Co., Detroit, and later production manager for the Towson Body Co., that city, now is manager of the Detroit branch of the Automobile Radio Corp., Detroit.

* * *

M. G. Jewett, of the Chain Belt Co., Milwaukee, has been elected president of the Milwaukee chapter of the American Society for Steel Treating. F. A. Hansen, of the Hevi Duty Electric Co., is vice president.

* * *

Martin E. Goldman has resigned as assistant sales development manager of the Motor and Equipment association, to accept the general managership of the Kingsley-Miller Co., Chicago, manufacturer of automotive accessories.

* * *

Charles S. Crawford, identified with the regional engineering staff of General Motors Corp., Detroit, has been appointed chief engineer of the Adam Opel Co., German subsidiary of the General corporation. He left New York June 1 for Germany.

* * *

Russell G. Hyde, in the production and estimating departments of the National Acme Co., Cleveland, for 10 years, has been appointed production manager. Mr. Hyde succeeds G. W. Sprague, who resigned a few weeks ago to take a position with the Wright Aeronautical Corp., Paterson, N. J.

* * *

C. W. Ribble, formerly press engineer for the Ferracute Machine Co., Bridgeton, N. J., manufacturer of presses, has become affiliated with the Welker Machinery Co. Inc., 2720 Union Trust building, Detroit, as sales engineer and will be in charge of the Ferracute Machine Co. account.

* * *

F. K. Buckalew has been appointed superintendent of the recently established oxygen producing plant at 1000 West Washington avenue, Oklahoma City, Okla., of the Linde Air Products Co., 205 East Forty-second street, New York. A. B. Curtis, with head-

(*Concluded on Page* 1640)

Here and There in Industry

Timely Information Which Records Developments in Various Lines of Productive Enterprise

E. C. ATKINS & CO. INC., Indianapolis, manufacturer of saws and machinery, has re-elected its officers, as follows: President, Henry C. Atkins; Nelson A. Gladding, first vice president and director of sales; William A. Atkins, second vice president and general superintendent; Elias C. Atkins, third vice president and production manager; K. W. Atkins, fourth vice president and manager southwest territory, headquarters, Memphis, Tenn.; Fred C. Gardner, secretary and treasurer. Directors include the officers and Sylvester Johnson Jr. The company was established in 1857.

* * *

CHICAGO PNEUMATIC TOOL CO., New York, will move its office at Knoxville, Tenn., to larger quarters in Cumberland avenue, near Gay street. W. M. Clark is district manager.

* * *

WARNER GEAR CO., Muncie, Ind., Ray P. Johnson, president, announces an expansion program which will include an additional unit and add about 80,000 square feet of floor space.

* * *

MUELLER CO., Decatur, Ill., manufacturer of brass products and cast pipe, has bought a site at Manghum and Nelson streets, Atlanta, Ga., where it will build a warehouse and office building to serve southeastern trade.

* * *

SUNDSTRAND MACHINE TOOL CO., Rockford, Ill., has bought the Rockford Union Foundry Co., of the same city and will operate it as a division. Complete reorganization and refinancing of the company has just been completed. Hugo L. Olson has been made president, Levin Faust and G. D. Sundstrand vice presidents, George A. Lindblade secretary and treasurer and G. H. Ekstrom assistant secretary and treasurer.

* * *

SOUTHERN WESIX CO., subsidiary of the National Wesix Co., San Francisco, has established a plant and distribution branch at 617 North Tenth street, Birmingham, Ala. The company manufactures water and air heaters.

* * *

AMERICAN HOIST & DERRICK CO., St. Paul, has moved its Chicago office from 1113 Fisher building to 1000 Engineering building, 205 West Wacker drive. The Pittsburgh office has been moved from 604 Chamber of Commerce building to 901 Farmers Bank building.

* * *

DELAWARE, LACKAWANNA & WESTERN railroad is making plans to electrify 173 miles of track, construction to start in six weeks. Structural steel and substation equipment bids will be asked shortly for five stations. Bids will also be asked on 141 motor-equipped coaches and reconstruction of an equal number.

* * *

HOUDAILLE-HERSHEY CORP. has offered a plan to stockholders of General Spring Bumper Corp. for share-for-share exchange of stock after a 50 per cent stock dividend to stockholders of the latter. The plan is contingent on deposit of 75 per cent of both classes of General Spring Bumper Corp. stock before July 1.

* * *

PYRAMID STAMP & TOOL CO., Madison and Beaubein streets, Detroit, recently incorporated to manufacture steel stamps and accessories, has obtained manufacturing space and installed equipment for production. Carl O. Malmstrom is president, H. C. Rickenbach vice president and P. J. Rickenbach secretary and treasurer.

* * *

RECORDING TACHOMETER CO., Worcester, Mass., recently organized, will build a plant in the fall and equip it for the manufacture of tachometers. At present the product is being manufactured by contract. Ensley A. Weir is president, Charles F. Boles vice president, Walter Brown secretary, George N. Hathorne treasurer. Directors are the officers and Frederick J. Branch.

* * *

APPLETON ELECTRIC CO., Chicago, manufacturer of electric products, has bought a line of conduit fittings from the Jefferson Electric Co., formerly the Chicago-Jefferson Fuse & Electric Co. The company's products include malleable outlets which are assembled without necessity of threading the conduit tube, making possible assembly in difficult situations.

* * *

GENERAL MOTORS OF CANADA LTD. is making plans to enlarge its plant at St. Catherines, Ont., for the manufacture of electrical equipment, transmissions, shock absorbers and truck axles. Additional shops will be built to house these activities. The plant at Walkerville, Ont., will also be enlarged sufficiently to accommodate manufacture of all truck and bus bodies.

* * *

MULLINS-GILSON CO. and Rushville Foundry Co., the latter a subsidiary of Arbuckle & Co., both of Rushville, Ind., have been merged under the name of the Mullins-Gilson Mfg. Co. The Mullins-Gilson company produces tractor accessories and disk cultivators. The foundry is to be used to produce castings for these devices. The two companies have been housed in the same building.

* * *

MACY CONVEYORS INC. has been organized at Decatur, Ind., and will equip a plant for the manufacture of portable conveyors. Officers include: I. W. Macy, president and general manager; John H. Heller, vice president and Leo Yager, secretary. Other members of the board are John O'Connor and L. G. Ellingham, Fort Wayne; J. W. Tyndall, C. J. Voglewede, C. D. Macy and W. A. Klepper, Decatur.

* * *

CLIFFS CORP., Cleveland, which controls 400,000 shares of Cleveland Cliffs Iron Co. common stock and an equal amount of stock held by C. S. Eaton and associates in steel company shares, has declared a stock dividend of about $50,000,000 in preferred shares and cash dividends of $2,000,000. William G. Mather was elected president of the new company with Cyrus S. Eaton, partner of Otis & Co., vice president; S. Livingston Mather, secretary, and C. G. Heer,

treasurer. The board will consist of Samuel Mather, W. G. Mather, S. L. Mather, E. B. Green, chairman of the executive committee of the Cleveland Trust Co.; C. S. Eaton, W. R. Burwell, president of the Continental Shares, Inc.; Richard Inglis, Otis & Co. partner, and Thomas H. White, president of the Commonwealth Securities Co.

* * *

GENERAL REFRACTORIES CO. has established its Cleveland office at 1126 Leader building. It also has moved its Buffalo office to 1210 Genesee building.

* * *

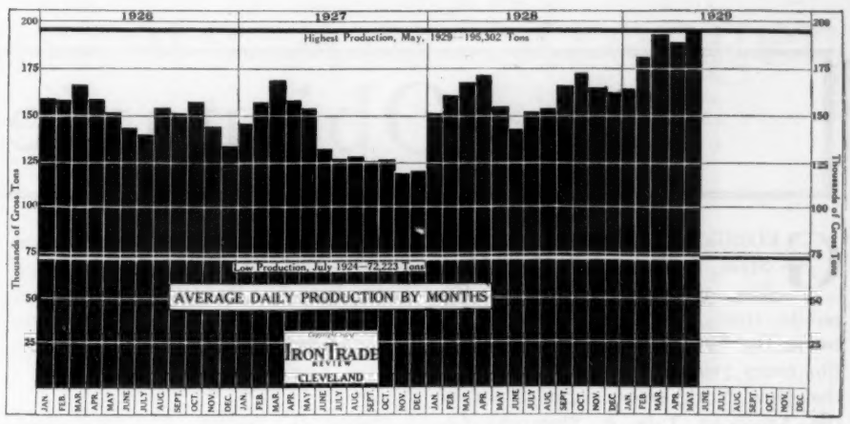
COLUMBIA TOOL STEEL CO. INC., Chicago, has a building at 85-87 Poyner street, Newark, N. J., which it is fitting for use as its eastern headquarters for the distribution of tool steel.

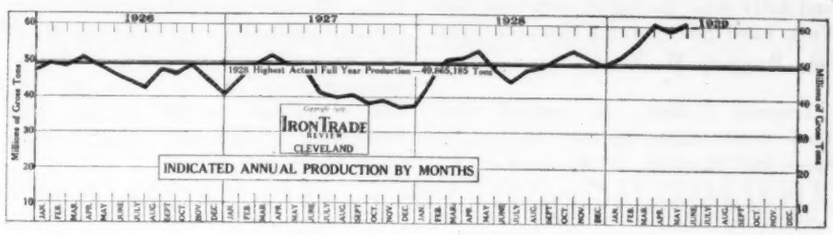
* * *

CANADA CARRIAGE & BODY CO., Brantford, Ont., has bought from the Cockshutt Plow Co., the plant and business of the Adams Wagon Co., Brantford. This gives the purchaser additional facilities for production of truck bodies.

* * *

LINDE AIR PRODUCTS CO. has established a new oxygen producing plant at 1000 West Washington avenue, Oklahoma City, Okla., with F. K. Buckalow as plant superintendent. The new plant is under the charge of A. B. Curtis, district superintendent, Dallas, Tex.





May Ingots Alltime Record

STEEL ingot production, both as to daily rate and monthly total, in May was the highest in history. After having reached an alltime peak of 194,548 gross tons daily in March, steelmaking receded slightly to 189,924 tons in April. But in May the industry got its second wind and the daily rate soared to 195,302 tons. Thus, beginning with February, each month of 1929 has seen ingot production at a rate greater than ever before.

May's total was 5,273,167 tons, compared with the 4,938,025 tons of April and the 5,058,258 tons of March, the previous top. Last May only 4,207,212 tons were made. For the first five months of 1929 the ingot total stands at the record of 24,058,804 tons, or nearly 15 per cent greater than the 21,054,170 tons turned out in the opening five months of 1928.

With the capacity of the industry revised upward, May production was at the rate of 99.59 per cent contrasted with 96.84 in April, 99.20 in March and 82.66 last May. For five months the operating average is 94.47 per cent, compared with 85.91 per cent one year ago.

Relatively, output of bessemer ingots increased faster in May over the previous record of March than did open-hearth ingots, denoting an overflow of business to bessemer converters. At the May rate, 60,800,000 tons of ingots would be produced in 1929, compared with the actual record of 49,865,185 tons in 1928. The above figures include open hearth and bessemer ingots only.

Steel Ingot Production—1928-1929

94.51 Per Cent of Industry Reporting

Gross Tons

1928	Open-hearth	Bessemer	Monthly output companies reporting	Calculated monthly output all companies	Number of working days	Approximate daily output all companies	Per cent of operation
Jan.	3,273,294	498,691	3,771,985	3,990,902	26	153,496	81.42
Feb.	3,300,407	521,250	3,821,657	4,043,457	25	161,738	85.80
March	3,692,648	567,330	4,259,978	4,507,217	27	166,934	88.55
April	3,505,104	564,110	4,069,214	4,305,382	25	172,215	91.35
May	3,394,301	582,128	3,976,429	4,207,212	27	155,823	82.66
5 mos.	17,165,754	2,733,509	19,899,263	21,054,170	130	161,955	85.91
June	3,010,341	528,193	3,538,534	3,743,903	26	143,996	76.38
July	3,068,257	528,588	3,596,845	3,805,598	25	152,224	80.75
Aug.	3,379,625	569,771	3,949,396	4,178,610	27	154,763	82.10
Sept.	3,375,654	544,710	3,920,364	4,147,893	25	165,916	88.01
Oct.	3,795,800	599,098	4,394,898	4,649,968	27	172,221	91.36
Nov.	3,442,112	590,669	4,032,781	4,266,835	26	164,109	87.05
Dec.	3,301,114	496,679	3,797,793	4,018,208	25	160,728	85.26
Total	40,538,657	6,501,217	47,129,874	49,865,185	311	160,338	85.05
1929							
Jan.	3,694,218	549,616	4,243,834	4,490,354	27	166,309	84.80
Feb.	3,599,224	489,279	4,088,503	4,326,000	24	180,250	91.91
March	4,183,869	596,691	4,780,560	5,058,258	26	194,548	99.20
April	4,026,576	640,351	4,666,927	4,938,025	26	189,924	96.84
May	4,276,186	707,484	4,983,670	5,273,167	27	195,302	99.59
5 mos.	19,780,073	2,983,421	22,763,494	24,085,804	130	185,275	94.47

Figures exclude crucible and electric ingots. Operation percentages for 1928 are based on an annual open-hearth and bessemer steel ingot capacity of 58,627,910 tons as of Dec. 31, 1927; 1929 percentages based on capacity of 60,990,810 tons as of Dec. 31, 1928.

International Harvester Co., Chicago, will call for bids in the near future for a second plant unit at Great Falls, Mont.

Obituaries

GEORGE DAMEREL, 65, of Steel & Tubes of New York Inc., a subsidiary of the Republic Iron and Steel Co., Youngstown, O., died in New York, June 6. For many years he was connected with the New York sales organization of the American Tube & Stamping Co. and later was identified with the New York sales office of the Weirton Steel Co., Weirton, W. Va.,

* * *

Leopold Eidletz, 72, retired New York construction engineer, died at his home in Princeton, N. J., June 6.

* * *

James Lewis, M.L.A., senior member of the iron working firm of William Lewis & Sons, Saint John, N. B., and provincial legislator, died at his home there May 23.

* * *

William S. Roby, 60, vice president of the S. B. Roby Co., Rochester, N. Y., iron and steel warehouse, died in his home in that city June 7, following a long illness.

* * *

P. J. Schneider, 48, manager of the American Tool & Mfg. Co., Urbana, O., dies, gages, etc., died there May 31. At one time he was director of public safety and has always been prominent in civic work.

* * *

George E. DeVinney, 75, for many years owner of the foundry and machine shop at Attica, N. Y., bearing his name, died recently in Clearwater, Fla., where he had resided since disposing of his business and retiring, about 10 years ago.

* * *

Edgar A. Fletcher, 62, who for many years was identified with the pump industry of New England, died at his home in Athol, Mass., May 31. About two years ago he sold out his business, the Athol Pump Co., to the Leavitt Machine Co., Orange, Mass.

* * *

Joseph Thompson, 83, a leading figure in the iron industry of Terre Haute, Ind., died recently. He learned the trade of puddler in Yorkshire, England, and came to this country in 1866. After working some time at Sharon, Pa., he located in Greencastle, Ind., and then in Terre Haute.

* * *

Eben Erskine Olcott, 75, president of the Hudson River Day Line, and former mining and metallurgical engineer, died at his home in New York, June 5. Mr. Olcott was a past president of the American Institute of Mining Engineers and of the United Engineering Society.

* * *

Haller D. Seavey, 52, Springfield, Mass., director of public relations and general purchasing agent of the Western Massachusetts Companies, died at Atlantic City, N. J., June 6. He was a delegate to the electric light convention at that city when stricken by a heart attack.

* * *

Ira Leroy Werner, 53, for nearly a quarter of a century experimental expert for the Oliver Chilled Plow Co., now the Oliver Farm Equipment Co., died recently. He entered the employ of the Oliver main plant in 1906, previously being associated with the Kansas City branch. He was born in Hamilton, Mo.

* * *

Gibson D. Packer, 70, attorney and former partner of Andrew Carnegie, died June 5 at his home in Pittsburgh. He became associated with the Carnegie Steel Co. as legal counsellor in 1889 and shortly afterward was made a partner of Mr. Carnegie. Subsequent to the formation of the United States Steel Corp. he resumed his private law practice.

* * *

Edgar A. Fletcher, 62, for 20 years prominently identified with pump manufacturing died recently at his home in Athol, Mass. He succeeded his father, A. V. Fletcher, as head of the Athol Pump Co. and under his direction the company expanded and enjoyed prosperous business for many years. Mr. Fletcher sold the controlling interest two years ago to the Leavitt Machine Co., Orange, Mass.

* * *

Murray Shipley, 65, who died at Cincinnati, May 29, after a brief illness, was prominent for many years in the machine tool industry. He retired in July, 1917, from the Lodge & Shipley Machine Tool Co., Cincinnati, which he organized with William Lodge in 1892, Mr. Shipley having charge of the commercial and financial end of the business. He was born in Cincinnati in 1865, attended the Chickering institute of Cincinnati and then attended Sheffield Scientific school, Yale university, from which he was graduated in 1885. He was in the mercantile business for a year and subsequently for two years was identified with the Manley & Copper Co., Philadelphia, structural iron fabricator. For four years following his return to Cincinnati, he was affiliated with Sechler & Co., manufacturers of vehicles, and in 1892 formed the Lodge & Shipley company. He was one of the founders of the National Machine Tool Builders' association and served a term as first vice president of the National Metal Trades' association and was a member of its administrative council. At one time he was president of the Cincinnati branch of the latter organization and also had served it as vice president. He was a trustee of the Children's hospital, Cincinnati, and was a member of the Queen City, Riding, Manufacturers', Business Men's, Cincinnati Country and Cincinnati Golf clubs.

Men of Industry

(*Concluded from Page* 1637)

quarters at Dallas, Tex., is district superintendent.

* * *

Arthur J. Slade, sales manager of the American District Steam Co., North Tonawanda, N. Y., has been elected president of the Rotary club of the Tonawandas.

* * *

P. F. M. Aubert, of Aubert & Duval Freres, Paris, arrived June 11 to tour this country. He can be reached through the Ludlum Steel Co., Watervliet, N. Y.

* * *

Sam Tour, formerly with the Doehler Die Casting Co., Batavia, N. Y., has resigned to become vice president of Lucius Pitkin Inc., New York, consulting chemists, asayers and metallurgists.

* * *

Fred Delano, who has been in charge of the pattern department, General Electric Co., Erie, Pa., works, for the past 16 years, will retire July 1. He was given a dinner and an automobile trunk by fellow workers prior to severing his connection with the company.

British Markets Are Stronger

Demand for Iron and Steel Improves, with Election Uncertainties Removed—Billet Price Advanced—French and Belgian Business Steady—Germans Increasing Export Trade with South America, Russia and Far East

European Headquarters,
IRON TRADE REVIEW,
Caxton House, Westminster, S. W.1

LONDON, June 11.—(*By Radio*)—British iron and steel prices generally are firmer, as election uncertainties have been dispelled, and demand is again asserting itself. Two more blast furnaces in the Middlesbrough district are being relighted. Exports of pig iron from the district in May totaled 21,057 tons, a considerable increase over recent months. Orders for billets are increasing, and makers have raised the price 2s 6d ($0.60) a ton. Several good contracts for freight cars have been received from the colonies and dominions. While rail mills in the Middlesbrough and Barrow districts report improvement in business, stuctural engineers at Birmingham complain of lack of orders. Tin plate shipments continue at a high rate. Demand for galvanized sheets is quiet.

A report from Paris states domestic iron and steel demands in France are slackening. Prices are stable. The German export trade with South America, the Far East and Russia has improved, and the domestic market is more active, according to advices from Berlin. Belgian markets are firm and the outlook is satisfactory, a report from Brussels states.

British Steel Products in Better Situation

LONDON, May 31.—(*European Staff Service*)—Iron and steel export markets are calm, due to some extent to the general election in Great Britain, immediately following upon that which took place in Belgium. British producers now are in a more satisfactory position than they have been for a long time. Demand for pig iron, even from outside markets, can hardly be satisfied, and when the influence of the electoral campaign is passed, additional furnaces probably will be blown in. Continental competition in the home market also is restricted. Supplies of continental semifinished steel available for export to Great Britain are comparatively small, and prices are maintained at recent high levels. Continental billets can be delivered in the Birmingham district at £6 2s 6d ($29.80), only 5s ($1.20) less than the domestic price. In view of the extended continental deliveries, this price is not attractive to British users.

In finished steel export demand from several important markets still fails to materialize, but there have been some inquiries from India, New Zealand, and eastern markets. Recent contracts obtained by British firms include 35,000 tons of rails for South Africa by Dorman, Long & Co. Ltd.; 15,000 tons for the Argentine to the United Steel Companies Ltd.; 9000 tons for central Argentine to Bolckow, Vaughan & Co. Ltd. Other contracts include 80 all-steel 90-ton iron ore freight cars and 20 64-ton trucks for the Bengal-Nagpur Railway Co., obtained by Metropolitan-Cammell Carriage, Wagon & Finance Co. Ltd.; 18 heavy-type locomotives for Rhodesia and 13 locomotives for South Africa by the North British Locomotive Co. Ltd.; an order for boiler tubes received from the Crown agents for the colonies by Howell & Co. Ltd., Sheffield.

Reports from the Brussels iron and steel exchange are that business conditions are stationary, but markets

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, June 10	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable								
PIG IRON		£ s d		£ s d		£ s d		£ s d
Foundry No. 3, Silicon 2.50-3.00	$16.98	3 10 0*	$17.46	3 12 0	$17.46	3 12 0	$17.46	3 12 0
Basic	16.61	3 8 6	17.10	3 10 6	17.10	3 10 6	16.73	3 9 0
Basic-bessemer	17.58	3 12 6†	17.10	3 10 6	17.10	3 10 6	16.73	3 9 0
Hematite, Phosphorus 0.02-0.05	17.95	3 14 0	23.66	605*	.....	.....	17.70	3 13 0
SEMIFINISHED STEEL								
Billets	$32.13	6 12 6	$26.19	5 8 0	$26.19	5 8 0	$25.95	5 7 0
Wire rods	41.83	8 12 6	30.92	6 7 6	30.92	6 7 6	30.92	6 7 6
FINISHED STEEL								
Standard rails	$37.59	7 15 0	$31.53	6 10 0	$31.53	6 10 0	$31.53	6 10 0
Merchant bars	1.79c	8 5 0	1.31c	5 18 9	1.31c	5 18 9	1.31c	5 19 0
Structural shapes	1.60c	7 7 6	1.15c	5 4 9	1.15c	5 4 9	1.12c	5 2 0
Plates, ship, bridge and tank	1.76c	8 2 6	1.39c	6 6 9	1.39c	6 6 9	1.40c	6 7 0
Sheets, black, 24 gage	2.17c	10 0 0	2.37c	10 15 0	2.37c	10 15 0	2.33c	10 12 0
Sheets, galvanized, 24 gage, corrugated	2.96c	13 12 6	3.01c	13 13 9	3.01c	13 13 9	3.08c	14 0 0
Bands and strips	2.17c	10 0 0	1.40c	6 7 6	1.40c	6 7 6	1.40c	6 7 6
Plain wire, base	2.06c	9 10 0	1.71c	7 15 0	1.71c	7 15 0	1.71c	7 15 0
Galvanized wire, base	2.93c	13 10 0	2.12c	9 12 6	2.12c	9 12 6	2.15c	9 15 0
Wire nails, base	2.39c	11 0 0	1.79c	8 2 6	1.79c	8 2 6	1.16c	5 5 0
Tin plate, base box 108 pounds	$ 4.49	0 18 6	.....	.....	.....	.....	$ 8.97	1 17 0

*Francs

Domestic Prices at Works or Furnace—Last Reported			Francs		Francs		Marks	
Foundry No. 3 Pig Iron, Silicon 2.50-3.00	$16.98	3 10 0	$18.57	475(2)	$17.24	620	$20.27	85
Basic pig iron	16.13	3 6 6	19.94	510(1)	17.10	615	21.70	91
Furnace coke	3.64	0 15 0	6.26	160	5.84	210	5.13	21.50
Billets	31.53	6 10 0	24.24	620	26.27	945	28.86	121
Standard rails	1.79c	8 5 0	1.46c	810	1.63c	1,250	1.51c	140
Merchant bars	1.84c	8 10 0	1.36c	755	1.37c	1,055	1.52c	141
Shapes	1.76c	8 2 6	1.26c	700	1.23c	945	1.49c	138
Plates, ship, bridge and tank	1.93c	8 17 6‡	1.54c	855	1.46c	1,120	1.71c	158
Sheets, black, 24-gage	2.28c	10 10 0	2.92c	1,620	2.73c	2,100	2.43c	225
Sheets, galvanized 24 gage, corrugated	2.96c	13 12 6	3.69c	2,050	3.84c	2,950	3.78c	350
Plain wire	2.06c	9 10 0	1.94c	1,075	2.15c	1,650	2.48c	230
Bands and Strips	2.17c	10 0 0	1.51c	840	1.70c	1,310	1.77c	164

*Middlesbrough; †Scotch foundry iron; ‡delivered; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 15s 0d ($3.64) f. o. b. Ferromanganese £21 13s, 0d ($105.00) delivered Atlantic seaboard, duty-paid. German ferromanganese £15 0s 0d ($72.75) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

generally are firm. While merchant bars and sheet bars are easier, beams, structural steel and plates are hardening. For certain shapes, deliveries extend to the end of August. Merchant bars generally are quoted between £5 18s ($28.55) and £5 18s 6d ($28.67) by Belgian, Luxemburg and French works. The pig iron market is firm and as much as £3 13s ($17.70) is quoted for foundry pig iron, 2.5 to 3 per cent silicon. In France there is a little less activity in export trade, but interest is centered on domestic business, which is satisfactory. Germany's export trade shows signs of activity, and shipments of cold-rolled steel, semifinished steel and ship plates and sections have been made to Great Britain, while orders also are being received from France, Jugo-Slavia, Italy and Japan. On semifinished steel and steel bars the Germans are slightly undercutting French, Belgian and Luxemburg prices. German exporters report American competition in Japan.

British Prices Lower

London, May 28.—(*European Staff Service*)—Board of trade returns for April give the average British export prices per gross ton for a certain number of iron and steel products. These prices are compiled from actual contracts which were made several months ago, and this accounts for the difference between these quotations and the base prices regularly quoted in our columns.

Compared with those of the preceding month, prices in April this year showed a decrease for every commodity mentioned, except tin plates. In comparison with those of a year ago, prices were higher for foundry pig iron, rails, galvanized sheets and tin plates, but lower for beams, plates and black sheets.

	£	s	d	$
Foundry pig iron	3	16	3	18.49
Beams	8	7	5	40.60
Rails	8	18	11	43.38
Plates	9	10	1	46.09
Black sheets under ⅛-inch thick	12	0	0	58.20
Galvanized sheets	15	6	9	74.37
Tinplates	19	14	6	95.66

German Output High

Berlin, May 28.—(*European Staff Service*)—During April German blast furnace production was the highest for the year. The April output included 709,099 tons of basic, 212,785 tons of ferroalloys, 90,101 tons of hematite, 89,922 tons of foundry, 1903 tons of direct castings, 870 tons of gray forge and 418 tons of acid bessemer pig iron.

April output of steel ingots and castings included 1,388,908 tons of ingots and 26,008 tons of castings. The ingot production was composed of 711,390 tons of basic open-hearth, 646,783 tons of basic bessemer, 13,988 tons of crucible and electric, 13,892 tons of acid open-hearth steel, and 2855 tons of ingot iron. Comparisons follow, in metric tons:

Metric tons

Mon. ave.	Furnace on last day	Pig iron	Steel ingots and casting	Finished steel
†1913	.....	909,640	993,640	970,240
1926	*109	803,625	1,028,470	856,340
1927	*116	1,091,875	1,359,225	1,069,930
1928	*101	984,700	1,209,770	963,550
1929				
Jan.	97	1,097,980	1,469,653	1,001,824
Feb.	96	981,695	1,269,874	864,801
March	97	1,061,214	1,314,373	904,257
April	99	1,105,098	1,414,916	978,473

†Present boundaries.
*Last day of year.

Luxemburg Output Off

Brussels, May 27.—(*European Staff Service*)—The output of pig iron in Luxemburg during April was less than in March, and included 228,887 tons of basic bessemer, 4525 tons of foundry and 1665 tons of gray forge pig iron.

April tonnage of steel ingots and castings was the highest for the year at 221,370 tons and compares with 228,975 metric tons, the maximum monthly output, in October, 1928. It included 223,071 tons of basic bessemer, 2356 tons of open-hearth and 671 tons of electric steel. Figures are as follows, in metric tons:

Mon. ave.	Furnaces on last day	Pig iron	Steel ingots and castings
1913	....	212,320	111,355
1926	40	209,295	186,980
1927	39	227,710	200,595
1928	38	230,840	214,315
1929			
Jan.	38	241,639	224,617
Feb.	38	209,207	195,388
March	38	237,039	221,370
April	38	235,077	226,098

French Steel Mills Booked Many Months; Seeking New Steel Uses

Office of IRON TRADE REVIEW,
9 Rue de Londres

Franc—3.91c

PARIS, May 28.—The tendency in every department of the metallurgical industries, generally speaking, is satisfactory. Orders are not so numerous as some months ago, but are regularly placed and the tonnage afforded is sufficient to guarantee good production. Delays of delivery for bars run from four weeks to six or seven months. In many cases it is not possible to shorten these delays, on account of the difficulty in finding labor.

The feeling of buyers is that the French metallurgical market will be quiet for a time, but it is expected activity will reappear in the fall. Building is proceeding well, but the Loucheur bill is only beginning to be applied. On the other hand, leaders of French metallurgy are working hard to develop and increase the uses of steel.

The O.T.U.A. group (technical office for uses of steel) has studied many problems and is trying to have the idea of steel houses accepted. At the Paris fair three types are presented: The first of corrugated plates, the second of steel frames and cement bricks, and the third, which seems to be the most interesting, only of cells made of pure iron plates; this last type uses five tons of metal for a four-room house, which is a base size unit.

Meetings of the various comptoirs have been held, and no change has been made in prices of commodities sold by them. The O.S.P.M. has done the same thing for molding phosphorus pig iron and has maintained its last price for delivery up to September. The tonnage to be sold in June has been fixed at 43,000 metric tons. It is feared that an increase in the price of coke will be decided upon, to become effective July 1, but at present this is only a rumor.

Semifinished products always are scarce, and it is quite easy to get an extra for quick delivery and for the qualities that are not sold by the comptoir, this being the case for forging quality. Beams are heavily sold, and it generally is the same for structural steel, requirements for which are expanding. The prices of bars are 760 francs f.o.t. eastern works, and from 770 to 780 francs f.o.t. northern works. Plates are quoted at about 810 francs in the east and 820 francs in the north. Medium-sized sheets are about 850 to 890 francs, and light sizes about 1150 to 1180 francs. The wire products market is active.

Belgian Production Up

Brussels, May 27.—(*European Staff Service*)—The output of pig iron in Belgium during April was slightly higher than in March.

April output of steel ingots and castings included 332,030 tons of steel ingots and 9890 tons of steel castings. Comparisons follow, in metric tons:

Mon. ave.	Coke	Act. Furn.	Pig iron	Steel ingots and castings	Finished steel
1913	294,000	....	207,055	205,550	154,920
1926	413,000	....	283,270	281,160	231,810
1927	448,880	....	312,620	309,040	255,185
1928	493,885	....	325,445	327,870	281,125
1929					
Jan.	513,550	56	350,680	357,010	313,000
Feb.	458,740	55	302,320	302,020	266,790
Mar.	520,660	56	334,000	348,830	300,340
April	499,730	56	336,110	341,920	300,540

French Trade Is Less

Paris, May 28.—(*European Staff Service*)—French exports of steel products during February were 281,276 metric tons, compared with 325,264 tons in January. Exports of pig iron were 41,251 metric tons in February, against 47,047 tons in January.

Imports of steel into France in February were 8950 metric tons, compared with 11,034 tons in January, and imports of pig iron were 3861 tons and 2086 tons respectively.

Abrasives Makers Form Export Corp.

Nine important producers of abrasive products have combined under the Webb-Pomerene act to form the Durex Abrasives Corp., with headquarters at 70 Montgomery street, Jersey City, N. J., and an operating office at 82 Beaver street, New York, to pool their export efforts. These nine companies are American Glue Co., Armour & Co., Baeder-Adamson Co., H. H. Barton & Sons Co., Behr-Manning Corp., Carborundum Co., Minnesota Mining & Mfg. Co., United States Sandpaper Co. and Wausau Abrasives Co.

Officers of the Durex corporation are: President, A. J. Sidford, vice president of Behr-Manning Corp.; vice presidents, F. J. Tone, president, Carborundum Co., W. L. McKnight, vice president, Minnesota Mining & Mfg. Co., and D. W. Fernhout, formerly general manager of International Behr-Manning Corp.; treasurer, R. W. Young, vice president, American Glue Co.; secretary, L. K. Southard, formerly secretary and general manager, American Surface Abrasive Export Corp.

A European sales division has been organized in charge of Mr. Fernhout, who will establish headquarters in England. A second sales division covering the world other than Europe will be in charge of G. A. Bergstrom, formerly divisional sales manager of International Behr-Manning Corp. A technical service division for the study of sanding and finishing problems has been organized by the Durex corporation.

Society Names Officers

Installation of Dudley H. Scott, chief engineer, Humphrey Co., Cleveland, and Warner Seely, secretary, Warner & Swasey Co., Cleveland, as presiding officers of the Cleveland Engineering society, will take place at the forty-ninth annual dinner of the organization, June 18. Mr. Scott and Mr. Seely recently were elected president and vice president, respectively, by the executive board. Orrin C. Sabin, was re-elected treasurer, Gilbert O. Ward, librarian, and Carlton R. Sabin, secretary manager. New trustees are Edward A. Fischer, city engineer, Lakewood, O., and E. J. Lund, Art Metal Construction Co., Cleveland. Kenneth H. Osborn, secretary, Osborn Enginering Co., was re-elected trustee.

Vermont Construction Co., Burlington, Vt., has changed its name to the Vermont Structural Steel Corp. There will be no change in management.

Delay Shape Conference

Washington, June 11.—Because the federal trade commission already is rushed with work in connection with trade practice conferences, an application for a conference for the structural steel industry has not yet received action. The application will go through the usual routine, and it may be autumn or winter before such a conference could be held.

Pails and Tubs Decline

Washington, June 11.—Production of pails and tubs in April shows a marked decline from March, but well above the preceding months of the year. Department of commerce monthly comparisons follow:

(In dozens)

	PAILS, TUBS		OTHER WARE	
1928	Production	Shipments	Production	Shipments
Jan.	125,536	149,304	32,678	35,689
Feb.	165,757	162,153	28,513	26,334
March	173,592	175,472	50,904	45,205
April	208,544	201,119	31,545	36,452
Total (4 mo.)	685,494	702,020	146,736	146,431
May	177,110	155,561	39,206	35,143
June	141,448	144,385	48,038	44,833
July	114,342	121,415	61,688	47,856
Aug.	127,797	142,487	37,846	44,377
Sept.	150,845	139,183	55,850	50,606
Oct.	153,813	152,258	56,469	54,596
Nov.	131,792	103,290	33,553	34,012
Dec.	112,923	102,802	36,042	23,567
Total	1,795,625	1,763,401	515,428	481,421
1929				
Jan.	151,106	165,745	40,649	36,896
Feb.	151,019	170,813	60,471	48,329
March	211,252	211,516	50,055	49,549
April	165,155	171,722	55,778	55,632
Total (4 mo.)	678,532	719,796	206,953	185,406

Scrap Institute Calls Direct Trading "Uneconomic, Boomerang"

DIRECT dealing between producer and consumer of scrap iron and steel was attacked as uneconomic and was termed a boomerang by Benjamin Schwartz, director general of the Institute of Scrap Iron and Steel Inc., at a meeting of the iron and steel division of the National Association of Purchasing Agents, in annual convention at Buffalo, June 5.

Mr. Schwartz discussed the problem from the point of view of the consumer, the producer and the government, and pointed out that any movement that would tend to diminish the assets of the scrap iron industry would jeopardize the ability of that industry to render a vital service to industrial America and to the national welfare in time of peace and national emergency. Mr. Schwartz said:

Charles M. Schwab, president of the American Iron and Steel institute, in his recent address at the annual banquet of the institute, drew a disconcerting picture for the benefit of American people, of a nation depleted to the extent of 250,000,000 tons of vital raw materials and natural resources during every year of the next decade, if steel production continues at the rate established in 1928. He also stressed the trusteeship that was placed in the hands of the leaders of the steel industry to conserve the diminishing supply of iron ore and other natural resources.

In this connection, it is important to note that in 1928, 125,000,000 tons of raw materials were conserved for future generations by the use of approximately 25,000,000 tons of scrap iron and steel. The Institute of Scrap Iron and Steel Inc., representing 90 per cent of the tonnage gathered, prepared and shipped by dealers throughout the country, feels a great sense of responsibility in this situation. It is the institute's hope that this responsibility, which is charged with a national interest, will bring together the dealers, producers and consumers of scrap to give consideration to this problem.

I have acquired a profound respect for the service rendered by the scrap iron dealers, and it is my desire to communicate that respect to the public and to all groups who are concerned with the industry. It is the only major industry, among these concerned with conservation, that has voluntarily organized itself; that has established a machinery of co-operation and adjustment of unfair practices, and that is carrying out in a very practical manner the national policy which is at the foundation of the Hoover administration without recourse to special legislation to help the industry.

Mr. Schwartz urged co-operation between producers and the local dealers who are members of the institute, and emphasized the service of the scrap iron dealer to American industry. The matter of specification of scrap iron and steel, in which the National Association of Purchasing Agents has done pioneer work, will be studied in close co-operation with the institute, according to plans submitted by the director-general.

Machinery

Dealers Backlogs Hold Heavy in Face of Increasing Business—Little Improvement Is Noted in Delivery Situation

BUYING continues brisk in most districts with little decline in either purchases or inquiry. In the face of capacity production and a steady incoming business, backlogs of most dealers hold heavy. An evidence of machine building activity is seen in the rapid pace of ball bearing manufacturers. Due to large expansion programs, aeronautical demands are increasing steadily. Inquiries from electrical interests are numerous with one maker of special machinery having an active inquiry list of 75 to 100 tools. Through the activity of the automobile industry an increased and unexpected demand has developed for grinding machinery. A Chicago distributor reports slightly less buying than 60 days ago, extended deliveries probably tending to postpone orders.

New York, June 11.—Machine tool buying continues brisk in the East. Inquiry shows no evidence of decline and both new purchases of equipment and inquiry are well spread over a wide range of industries. Little progress is being made toward shortening deliveries which in many cases range up to eight weeks and even longer in others. Machine builders' backlogs hold heavy in face of incoming business and capacity production. June, up to this point, has brought a volume fully up to the May rate. One large list is out, including a varied number of large and small tools and one large planer. Electrical interests are steady buyers and inquiry from this source is active. A maker of special machinery has 75 to 100 tools on what may be classed an active inquiry list. The tendency toward higher price levels continues in spots, a line of power hacksaws being marked up slightly. Plant production is at full capacity and at an overtime rate in many instances. Some builders are reporting a fair volume of export business. Aeronautical demands are broadening steadily with large expansion programs pending. Another evidence of machine building activity is reflected in the rapid pace of ball bearing makers. There has been no recession in the rapid pace in this industry which often develops at this period. Railroad business has been slow to materialize in volume. Power plant equipment is moving well.

Worcester, Mass., June 11.—A slightly increased and unexpected demand has developed, especially in grinding machinery, through the automobile industry. Sustained bookings for fall delivery continue a feature, although many orders coming in specify immediate delivery. Steady operation through third quarter is assured. Equipment makers continue at capacity while small tool operations remain satisfactory.

Pittsburgh, June 11.—Orders for machine tools continue in good volume and more active than the rate a year ago. May sales for most interests showed a fair gain over April. Inquiry is keeping pace with awards, although there is a lack of outstanding large lists, with one or two exceptions. Westinghouse Electric & Mfg. Co. has several tools remaining to be closed on its second quarter list and is preparing a fairly large volume of equipment for placing during the third quarter. Machine tools for the new Ambridge, Pa., plant of the A. M. Byers Co. remain to be placed although considerable rolling mill equipment has been awarded. Morgan Engineering Co. will supply a universal mill at that plant. Included in other recent awards of heavy machinery is a universal mill for the Gulf States Steel Co., Alabama City, Ala., awarded to the Mackintosh-Hemphill Co. Mesta Machine Co. is understood to have received a contract for a blooming mill for the Michigan Steel Co. Deferred delivery on most types of machine tools continues in effect, with shipment extended as far as six months on horizontal drilling machines. The crane market continues active from the standpoint of pending business although few awards are noted.

Chicago, June 11.—Machine tool sales for most distributors in this territory are maintaining the pace of the past several weeks, while other houses report slightly less buying than 60 days ago. Extended deliveries apparently are helping to postpone orders. A few manufacturers report production gaining headway and consequent slight improvement in deliveries. The carry-over of business into June was much heavier than a year ago, and was unusual for this period. International Harvester Co. again is in the market for some equipment. John Deere & Co. have completed purchases against their recent list. Several general machine shops in this district have placed orders. A radio manufacturer has a list of about 12 items before the market. A tool and die shop in this district may buy later for a new plant development. Rock Island, Burlington, Santa Fe and Union Pacific have lists pending. Santa Fe purchased several additional items during the week. One line of planers has been advanced 10 per cent in price, effective June 1. Several lines of grinders also have been advanced slightly, and a manufacturer of hack saws has raised quotations about 10 per cent, also effective June 1.

Cleveland, June 11.—Business in this territory holds at a steady level, although it is still below that of two months ago, due to the restricted buying of the automobile industry. All lines of general manufacturing remain good customers of both production machines and accessories. No change is reported in the Detroit area except that Oakland Motor Car Co. is purchasing equipment extensively, understood to be for production of a new 8-cylinder model. The opinion has been expressed that the automotive industry will resume buying in July and will continue a good customer until fall. Machinery dealers report deliveries somewhat easier, although still well deferred. Tool building plants are running night shifts, but it is impossible to find a sufficient supply of skilled labor. No price changes have been noted except in one line of shapers to the extent of about 8 per cent. Used machinery demand is good with dealers unable to find sufficient equipment for resale.

CRANE ORDERS PENDING

Two 5-ton cranes for Pittsburgh Plate Glass Co., Pittsburgh, to Alliance Machine Co.

Among single orders were: 75-ton hot metal ladle crane for Russia through Amtorg Trading Corp., New York, to Alliance Machine Co.; 10-ton bucket crane for Standard Portland Cement Co., Painesville, O., to Alliance Machine Co.; 30-ton handpower traveling crane for unnamed buyer at Paterson, N. J., to New Jersey Foundry & Machine Co.; 8-ton maintenance-of-way locomotive crane for yard work for American Car & Foundry Co. to Mott & McElrath; 8-ton crawler crane with magnet equipment for Pavonia Scrap Iron & Metal Co., Jersey City, N. J., to Mott & McElrath; 30-ton locomotive crane for new carferry terminal on Jones island, Milwaukee, for the Milwaukee Central Board of Purchases to Orton Crane & Shovel Co.; ore bridge for Bethlehem Steel Co., Coatesville, Pa., to Alliance Machine Co.

CRANE ORDERS PLACED

Two 25-ton locomotive cranes for the New York Central railroad; pending.

Guy derrick and crane, 3 to 5-ton capacity with 25 to 40-foot boom, for National Products Corp., Middletown, Conn.; inquiry issued.

1-yard single-line clamshell bucket for H. W. Benkart, Buffalo; pending.

The Georgia Manufacturers' association, membership of which includes several of the larger foundries and machine shops of the state, will hold its annual convention at the Biltmore hotel, Atlanta, June 25. J. P. McGrath, Healey building, Atlanta, is executive secretary of the organization.

CONSTRUCTION *and* ENTERPRISE

Concise Timely Business Building Opportunities from Field of Industry

North Atlantic

HARTFORD, CONN.—Pratt & Whitney Aircraft Co., D. L. Brown vice president, advises that plans for its proposed new plant are still indefinite, regarding dimensions and equipment which may be required.

BALTIMORE—Curtiss-Caproni Corp., 39 Broadway, New York, has leased 25 acres at the municipal airport and plans construction of a manufacturing plant for sea planes. Capt. G. C. Westervelt will be in charge of the plant. Estimated cost $1,000,000.

WORCESTER, MASS.—Recording Tachometer Co., 134 Elm street, recently was incorporated. Ensley A. Weir, president, advises that it plans to build a plant next fall and purchase equipment for manufacturing purposes.

NEWARK, N. J.—American Platinum Co., 231 New Jersey Railroad avenue, rejected bids for proposed plant addition. F. A. Phelps, 21 Fulton street, is architect. (Noted May 30.)

BUFFALO—General Motors Corp., Detroit, is reported to have plans for establishing a plant in the River road section for one of its constituent companies.

FILLMORE, N. Y.—Rochester Gas & Electric Corp., 89 East avenue, Rochester, N. Y., plans construction of an electric light plant here.

LONG ISLAND CITY, N. Y.—Cole Metal Products, 33 Crescent street, advises construction contract has not been awarded for its contemplated 2-story plant addition, 100 x 265 feet.

NEW YORK—Curtiss Bronx Field Inc., a subsidiary of Curtiss Airports Corp., which recently acquired a 250-acre tract in the Bronx, will establish a large air terminal. Equipment will include hangars, machine shops, covered grandstands, mail and passenger stations. Curtiss Flying Service, 27 West Fifty-seventh street, will use it as a terminal. Estimated cost $3,000,000.

BRISTOL, PA.—Pacific Steel Boiler Corp. is constructing a plant addition, 85 x 200 feet, which will add about 18,000 square feet to the present plant.

BROOKLYN, N. Y.—Brooklyn Boro Gas Co., Mermaid avenue and West Seventeenth street, plans construction of a garage and repair shop, 157 x 197 feet. Bloch & Hesse, 18 East Forty-first street, New York, are architects.

BROOKLYN, N. Y.—Metropolitan Engineering Co., 1250 Atlantic avenue, manufacturer of pressed steel welded products, plans construction of a 2-story plant addition containing approximately 40,000 square feet. E. W. Helms, 88 Lexington avenue, New York, is architect.

HOMESTEAD, PA.—Standard Steel Propeller Co. has awarded contract for construction of its new plant to Nicola Building Co., 6388 Penn avenue, Pittsburgh. (Noted May 16.)

PHILADELPHIA—Atwater Kent Mfg. Co., Wissa avenue and Abbotsford road, has leased a machine shop building at Fox street and Roberts avenue.

PHILADELPHIA—Proctor & Schwartz Inc., Seventh street and Taylor road, manufacturer of textile and drying machinery, has completed plans for plant addition. Simon & Simon, Fidelity building, Philadelphia, are architects.

PHILADELPHIA—Leeds & Northrup Co., 4901 Stenton avenue, manufacturer of electrical instruments, has awarded contract for plant alterations and improvements to W. R. Dougherty, 1610 Sansom, Philadelphia. Estimated cost $30,000.

SCOTTDALE, PA.—United States Casket Co. plant was recently damaged by fire. Most damage was done to the motors, electric saws and lathes.

East Central

BLOOMINGTON, ILL.—Hays Custer Stove & Furnace Co., 718 East Empire street, recently suffered heavy damage to its foundry and furnace plant by fire. Estimated loss about $100,000.

CHICAGO—Magnavox Co., Oakland, Calif., manufacturer of radio loud speakers, will locate a manufacturing plant at 3931 South Winchester avenue, Chicago.

CHICAGO—Chicago Hardware Foundry Co., 209 West Randolph street, has started construction of a plant addition to be completed in 60 days, according to S. A. Simondson, engineer at the plant. Estimated cost $25,000.

CHICAGO—American Iron & Wire Co., 1622 Carroll avenue, C. J. Scott, advises it is constructing an addition, 35 x 120 feet, for the Hubbard Spool Co., manufacturer of metal spools and bobbins. Company uses punch presses, sheet metal and woodworking machinery.

ROCKFORD, ILL.—Barber-Colman Co. has awarded contract for a 1-story machine shop on River street. (Noted Jan. 31.)

AUBURN, IND.—Auburn Automobile Co. has plans for construction of a plant addition. A. M. Strauss, 415 Cal-Wayne building, Ft. Wayne, Ind., is architect.

MUNCIE, IND.—Warner Gear Co. plans immediate construction of a 1story plant addition, 200 x 450 feet, on Seymour street, according to Ray P. Johnson president. A. J. Glaser Construction Co., Muncie, has been awarded contract for the building.

RICHMOND, IND.—National Automatic Tool Co. plans construction of plant addition, 100 x 200 feet. Work will be started soon, according to Harry Bockhoff president.

DEARBORN, MICH.—Stout Air Services Inc., division of Ford Motor Co., is having plans prepared for a 1-story plant, 190 x 600 feet, on Oakwood boulevard. A. Kahn, Marquette building, Detroit, is architect.

DETROIT—Federal Screw Works, 3401 Martin street, has awarded contract to Hazelton-Clark Co., Michigan Theater building, for a plant addition. (Noted May 23.)

DETROIT—Council has authorized John W. Reid, commissioner of public works, to advertise for bids for the general contract on municipal hangar, 200 x 1010 feet. Estimated cost about $1,000,000. (Noted April 4.)

DETROIT—Leroy C. Smith, engineer-manager for the Wayne county road commission, has been authorized to proceed with the plans for completing the Wayne county airport at Middlebelt road and Wabash railroad, at a cost of $811,000. Included will be a hangar, 125 x 400 feet, at a cost of $350,000, and $50,000 power plant.

ESCANABA, MICH.—Chatfield Machine & Foundry Co., 718 Stephenson avenue, Escanaba, Mich., recently damaged by fire. Repairs now being made.

JACKSON, Mich.—Automotive Fan & Bearing

Co. has purchased a 9-acre tract on Wildwood avenue, and plans to build an addition. The first unit is expected to be completed in 60 days. It will house the machine shop and assembly facilities.

LANSING, MICH.—Olds Motor Works plans construction of a plant addition, 125 x 460 feet. H. E. Beyster, General Motors building, Detroit, is engineer.

MUSKEGON, MICH.—Accuralite Co. Inc., manufacturer of pistons, plans construction of a plant addition to cost about $50,000.

BELLAIRE, O.—Blackburn Enamel Co., recently incorporated to manufacture enameling parts for staves and heaters, will occupy a unit of the old Novelty works, between Thirty-third and Thirty-fourth streets. M. E. Blackburn is one of the incorporators.

CLEVELAND—Ohio Coal & Supply Co., Western Reserve building, has leased a tract fronting 225 feet on the Cuyahoga river near Carter road, with docking privileges. It is to be improved with an office, warehouse and loading machinery.

CLEVELAND—Cleveland Institute of Aviation, Society for Savings building, plans construction of hangar, 100 x 145 feet, including repair shop, and a 2-story office building, 40 x 125 feet, according to Arthur H. Clark president. Work will be started soon.

CLEVELAND—Atlas Plating Works Inc., 277 East 156th street, has leased a 2-story building giving it an additional 21,000 square feet of manufacturing space. A conveying system, automatic plating and polishing machines are included in equipment to be purchased, according to W. B. Pleadwell president.

CLEVELAND—Franklin Steel Co., 5426 Lake court, has leased property on East Seventieth street, where it plans construction of an office building, shear room and warehouse to cover approximately 25,000 square feet. Equipment will include cranes, according to Frank J. Ahern president.

COLUMBUS, O.—Ralph H. Sweetser, Seneca hotel, and associates have obtained an option upon American Rolling Mill Co. property in Columbus for the purpose of erecting by-product coke ovens.

HAMILTON, O.—American Tar Products Co., Union Trust building, Pittsburgh, has started construction of a plant at New Miami, near here. Estimated cost about $500,000.

WOOSTER, O.—Akron Brass Co. has let contracts for a plant addition which is estimated to cost about $10,000. The new building will provide space for a new melting room and factory. The contracts let also include one for the construction of sand storage space. John Schellin is manager.

YOUNGSTOWN, O.—Youngstown Steel Car Door Co. has awarded contract to Heller-Murray Co., 222 West Rayen avenue, Youngstown, for construction of two buildings, of its new plant. They will be 120 x 600 feet, and 60 x 200 feet. (Noted May 23.)

BRODHEAD, WIS.—City water and light commission is starting work on remodeling and enlarging the municipal power plant and will build a new diversion dam, 280 feet long, 7½-foot head, with one hand operated 20-foot tainter gate and a 10-foot gate with remote control. The Power Engineering Co., 716 Metropolitan Life building, Minneapolis, is in charge.

EDGERTON, WIS.—Wisconsin Power & Light Co., Madison, Wis., is completing plans for rebuilding its power plant at Fulton, near Edgerton, at an estimated cost of $75,000. E. J. Kallevang is chief engineer.

MADISON, WIS.—Madison-Kipp Corp., 201 Waubesa street, manufacturer of lubricating devices, has awarded contracts for the construction of a shop addition estimated to cost $20,000.

MADISON, WIS.—Royal Rapid Corp., 16 North Carroll street, will build a $75,000 motorbus terminal, garage and service building on East Main, near Burleigh street. M. R. Wickman is general manager.

MADISON, WIS.—Wisconsin Telephone Co., 418 Broadway, Milwaukee, has let contracts for the construction of a garage, warehouse and service shop, 1-story, 62 x 125 feet, at Bearley and East Main streets, Madison. It will cost about $65,000. Architects, Herbst & Kuenzli, 130 Wisconsin avenue, Milwaukee, are in charge.

MILWAUKEE—A. E. Lauersdorf, 715 South Pierce street, is building a new machine shop, 50 x 128 feet, to cost about $25,000 with equipment.

MILWAUKEE—Great Lakes Malleable Co., 715 Clinton street, will build a 1-story brick and concrete shop addition, 30 x 100 feet, at 708 Reed street.

SHEBOYGAN, WIS.—Garton Toy Co., which suffered a heavy fire damage May 31, has taken over a nearby 4-story building, 150 x 300 feet, and will install complete new equipment for making wood and metal toys and novelties. Power plant and elevators already are installed. E. B. Garton is president.

Southern States

CORNING, ARK.—City council gave franchise to W. F. Moody, Little Rock, Ark., to operate a lighting plant here. The new plant will cost about $50,000. Additional machinery will be added after the plant is in operation.

FORT SMITH, ARK.—W. H. Vaughn, commissioner and head of the water department, proposed before the commission that a municipally owned and operated power and light plant should be constructed.

ATLANTA, GA.—Atlanta Aircraft Corp., recently incorporated to manufacture airplanes, has a site at Candler field and plans to build a plant. Robert Gregg, president of the Atlantic Steel Co., is president.

BARNSDALL, OKLA.—Oklahoma Power & Water Co. subsidiary of the Charles Page interests, Sand Springs, Okla., is building new transmission lines and substations in this locality and is rebuilding its system to supply Barnsdall Refining Co. plant with electric power.

OKLAHOMA CITY, OKLA.—Central Tool Co., E. W. Hughes, Colcord building, general manager, has taken over Central Tool Co. plant at Wetumka, Okla., and Painter Tool & Supply Co. at Shawnee, Okla. The Wetumka plant has been abandoned and machinery moved to Oklahoma City, where a plant for the manufacture of oil field tools is being constructed. The Shawnee plant will be used mostly for repair work.

TULSA, OKLA.—W. C. Norris Mfg. Co., 6 North Frisco avenue, manufacturer of oil well supplies, plans construction of a 1-story machine shop, 35 x 85 feet. J. W. Robb, 1114 South Boston street, is architect.

WEWOKA, OKLA.—Standard Tool & Supply Co., O. M. Gahagan manager, recently suffered loss of its shop by fire. A new plant is contemplated.

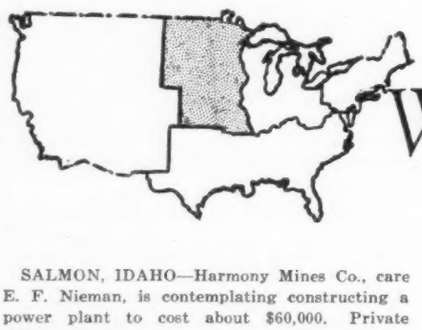
MEMPHIS, TENN.—Murray Wood Product Co., a subsidiary of Murray Corp. of America, Detroit, will build a duplicate of the unit now being completed, with the exception of the power plant. Estimated cost $2,000,000.

MEMPHIS, TENN.—United States engineers will receive bids until June 17 for eight shop and warehouse buildings at the government depot opposite Memphis. A boiler shop, blacksmith shop, foundry and alterations to the machine shop are included in the program.

ABILENE, TEX.—City commission has let contract to B. Russell Shaw, 4616 Linndale street, St. Louis, for construction of municipal airport for which $100,000 in bonds was recently voted.

McALLEN, TEX.—City, care D. W. Weber, has plans for construction of an airport, including hangars, lighting system and repair shops. Estimated cost $100,000.

SAN SABA, TEX.—City, care N. C. Walker mayor, has plans for improvements to waterworks. Estimated cost about $75,000.



West Central

SALMON, IDAHO—Harmony Mines Co., care E. F. Nieman, is contemplating constructing a power plant to cost about $60,000. Private plans.

ALBIA, IOWA—City adopted ordinance to give a franchise to the Municipal Utilities Co., Des Moines, Iowa, to erect and operate a power and light plant. Estimated cost about $327,000.

MUSCATINE, IOWA—Iowa Sheet Metal Products Co. plant was recently damaged by fire. Estimated loss about $25,000. Reconstruction of buildings damaged will be started at once,

according to A. F. Grensing president.

CAPE GIRADEAU, MO.—Marquette Cement Mfg. Co., Marquette building, Chicago, plans installation of power equipment in connection with proposed improvements to its plant here. Estimated cost about $350,000.

KANSAS CITY, MO.—R. A. Rearwin Airplanes Inc. plans establishing a plant to manufacture airplanes at Fairfax airport. Charles A. Smith, architect, Finance building, prepared the plans. Estimated cost about $500,000.

KANSAS CITY, MO.—Beacon Airways of America Inc., F. W. Henningway president, is having plans prepared for a 1-story salesroom and repair shop to cost about $90,000. C. E. Shepard, Huntzinger building, Kansas City, is architect.

ST. LOUIS—Multiplex Display Fixture Co., 918 North Tenth street, D. M. Miller, advises that it plans an addition, 58 x 105 feet. The first floor will probably be used as a machine shop.

ST. LOUIS—Von Hoffman Aircraft Co., 105 South Ninth street, has awarded construction contract for plant, 100 x 200 feet, to the Cornet Co., Chemical building, St. Louis. (Noted May 2.)

Western States

PHOENIX, ARIZ.—Central Arizona Light & Power Co. has plans in progress for constructing a steam electric power plant. Estimated cost about $2,500,000.

LOS ANGELES—Axelson Machine Co., 6160 South Boyle, manufacturer of radial airplane engines, has started construction of a plant addition.

LOS ANGELES—El Travia Industrial Terminal Corp., 6600 Lexington avenue, has awarded construction contract for an airplane manufacturing plant on Thirty-third street to Summer Sollitt Co., 810 West Sixth street.

LOS ANGELES—Lyon Metal Products Inc., 337 South Anderson, has started construction of its new plant at 3650 Union Pacific avenue. The building will occupy 18,000 square feet, and will cost about $50,000. Machinery will be installed later.

CIRCLE, MONT.—Montana Dakota Power Co., Minneapolis, has plans for constructing a diesel oil burning engine power plant here, also one at Richey, Mont.

NORTH BEND, OREG.—Mountain States Power Co., controlled by the Byllesby Engineering & Management Co., 231 South LaSalle street, Chicago, will enlarge the power plant facilities here. Estimated cost about $1,000,000.

PORTLAND, OREG.—Soule Steel Corp. of California has purchased a tract on St. Helens road, according to the Portland chamber of commerce, and plans immediate construction of a fabricating plant containing about 40,000 square feet. Estimated cost about $125,000.

OLYMPIA, WASH.—Olympia Veneer Co. has started construction of a power plant as part of its expansion program. Estimated cost $70,000.

SEATTLE—Harbor Island Mfg. Co., recently incorporated to manufacture different kinds of pumps, plans construction of a plant on West Spokane street. Construction is to start within sixty days. T. W. Wade, president of Wade & Co., 1122 West Spokane street, is one of the incorporators.

Canada

WINNIPEG, MAN.—Installation of a new boiler unit in connection with the steam heating plant here has been recommended to the chairman of the public utilities committee of the city council, by J. G. Glassco, city hydro manager. Proposed installation will cost $250,000. Total requirements for the plant over the next five years will amount to $1,000,000.

GUELPH, ONT.—A number of subtrades have been let in connection with $250,000 plant addition for the Guelph Stove Co. here. (Noted April 25.)

HAMILTON, ONT.—Contract for the new $1,000,000 docks for the Steel Co. of Canada Ltd. has been awarded to the Nelson River Corp., Toronto, Ont. In addition to the above mentioned undertaking the Canada Steamship Lines will spend $1,000,000 on the docks of the Hamilton By-Products Coke Ovens, here.

HARROW, ONT.—A number of subtrades have been awarded in connection with the construction of a power plant here to cost $60,000 for the W. Clark Co. Ltd. General contract has been awarded to Wilson-Muxlow Ltd., 320 Victoria street, Windsor, Ont. (Noted April 11.)

KINGSTON, ONT.—A company in which Capt. E. L. Janney is interested proposes to purchase the building formerly occupied by the Collie Woolen Mills and owned by the Canadian Bank of Commerce here. New company will manufacture airplanes, motor boats, etc., and will equip the building for this purpose.

LEAMINGTON, ONT.—Council is asking for prices and information regarding the installation of a new pump in waterworks plant. Clerk, R. M. Selkirk.

NEWMARKET, ONT.—H. C. Slemin, managing director of the Office Specialty Co., announced that his company will start work at once on a factory addition, 55 x 200 feet, to be completed by next October. Complete woodworking equipment and tools will be purchased for the new plant.

SAULT STE. MARIE, ONT.—A survey is underway at the mills of the Abitibi Power & Paper Co. here in connection with plans for an extensive program of construction during the present summer. George R. Gray is vice president.

ST. CATHARINES, ONT.—According to R. S. McLaughlin, president of General Motors of Canada Ltd., Oshawa, Ont., the company's plant here, which was recently acquired from the McKinnon Industries Ltd., will be greatly enlarged. Construction work will be started as soon as possible. The company will produce truck axles, electrical equipment, transmissions, shock absorbers, etc. The plant at Walkerville, Ont., will be enlarged for the production of truck and bus bodies.

TECUMSEH, ONT.—Plans for the proposed Canadian National Railways-Wabash yards here have been approved by the heads of both railways, and the companies are now in a position to start work on the proposed $2,400,000 undertaking here, according to Superintendent H. W. Matthews. The project will include the erection of shops, roundhouse and various other plants.

TORONTO, ONT.—Sidway-Topliff Co., manufacturer of wheeled vehicles for children, has purchased the Nordheimer building on Hook avenue at West Toronto. Complete tools and equipment for manufacturing purposes will be installed. F. R. Hodgens is president.

TORONTO, ONT.—Plans are being prepared by architects, Catto & Catto, 1 Wellington street east, for the erection of a 4-story, brick and steel addition to the plant of the James Morrison Brass Mfg. Co. Ltd., 93 Adelaide street west. (Noted May 23.)

TORONTO, ONT.—Roto Laundry Equipment Co. has obtained the patent rights for Canada and the British Empire for the manufacture of a new invention known as the Roto Laundry Equipment Unit, made and sold by the Roto Laundry Equipment Co. Inc., Des Moines, Iowa. It is the intention of the new concern to proceed immediately with the establishment of a manufacturing plant here. T. W. Chadburn, of the Toronto board of trade and president of the Auto Knitter Hosiery Co., is president of the new Canadian company.

WALKERVILLE, ONT.—Eclipse Machine Co., Argyle road, has awarded a number of contracts, including the general contract to H. G. Christman Burke Co., Fisher building, Detroit, and the steel contract to the Canadian Bridge Co., in connection with the erection of an addition to its plant here to cost $100,000. (Noted May 2.)

HIGH FALLS, QUE.—James MacLaren Co. Ltd., Buckingham, Que., has approved plans for immediate construction of a hydroelectric power plant on the Lievre river, near here. Estimated cost $10,000,000. (Noted March 7.)

MONT JOLI, QUE.—Council is having plans prepared and bids will be called soon for construction of waterworks and sewage disposal plants here. J. A. Clarveau, 19 James street, Quebec, Que., is engineer. Joseph Dube is secretary and treasurer of the council.

MONTREAL, QUE.—A number of subtrades have been let in connection with plant addition

at Richmond and Richardson streets, here for the Northern Electric Co., 121 Shearer street. (Noted May 23.)

PORTNEUF STATION, QUE.—J. Ford is contemplating building a power house here to cost about $30,000.

Recent Incorporations

CHICAGO—Chicago Aero Fan Co., 118 North LaSalle street, suite 205, has been incorporated with $30,000 capital to manufacture and sell aeroplane fans, by John J. Joyce.

CHICAGO—Child Welfare Device Co., 185 North Wabash avenue, has been incorporated with 500 shares no par stock to manufacture and sell medical implements, tools and equipment, by William Thompson.

CHICAGO—Chicago Steel & Ornamental Iron Co. Inc., 2252 West Division street, has been incorporated to manufacture and install structural steel and ornamental iron by Harold Stein.

CHICAGO—Barrel Fitting & Seal Corp. of America, 919 South Keeler avenue, has been incorporated with $200,000 preferred and 100,000 shares no par stock to manufacture and sell barrel products, bushings, metallic products, etc.

ROCKFORD, ILL.—Rockford Construction Co., 210 Catherine street, has been incorporated with $500,000 capital to manufacture and sell machinery and equipment, etc., by H. G. Yost.

INDIANAPOLIS—Indiana Pump & Compressor Co. has been incorporated with 1000 shares no par stock to manufacture air lift pumps and other appliances for pumping water and other liquids. R. M. Pruitt, Indiana Pndiana Pythian building, is one of the incorporators.

NEW ORLEANS—Crescent Machine & Tool Co. has been incorporated with $5000 capital, by Harvey D. Wagar, 414 South Hennessy street. William J. Ferris is secretary and treasurer.

BEVERLY, MASS.—Vulcanide Shoe Machinery Corp., 73 Park street, has been incorporated with 1000 shares no par stock to manufacture machinery and equipment, parts and tools. James A. Torrey is president.

EVERETT, MASS.—Murray Engineering Corp., 1934 Revere Beach parkway, has been incorporated with 5000 shares no par stock to manufacture automobile accessories, machinery, automatic devices, etc. John J. McCarthy is president.

GARDNER, MASS.—Bello Corp., 32 Pleasant street, has been incorporated with $100,000 capital to manufacture razors and razor blades. Joseph P. Carney is treasurer.

HOLYOKE, MASS.—Reliance Specialty Co. Inc. has been incorporated with $50,000 capital to manufacture mechanical devices, machinery and tools. Peter S. Sinclair, 39 Laurel street, Holyoke, is president.

MILTON, MASS.—H. W. Bassett Inc., 556 Adams street, has been incorporated with $75,000 capital to manufacture and deal in electric motors, dynamos and other electrical machinery appliances. Harold W. Bassett is president.

TAUNTON, MASS.—Perkins Co., 90 Ingell street, has been incorporated with 200 shares no par common stock to engage in general foundry and machine shop business, and deal in all kinds of castings, etc. Eben Perkins is president.

DETROIT—Detroit Acme Tool Products Co., 1214 Beaubien street, has been incorporated with $15,000 capital to operate a machine shop, by Joseph Massie.

DETROIT—Superior Auto Block Co. has been incorporated with $10,000 capital to manufacture and deal in automobile loading blocks, by Howard E. Moore, 8081 Cahalon street.

DETROIT—Pyramid Stamp & Tool Co. has been incorporated with $25,000 capital to manufacture and deal in marking devices and tools, by Carl O. Malmstrom, 4364 Tyler avenue.

LANSING, MICH.—Wright Model Airplane Corp., 419 East Shiawassee street, has been incorporated with $10,000 capital to manufacture and deal in model airplanes, by Kenneth O. Wright.

REED CITY, MICH.—Dean Construction Co. has been incorporated with $20,000 capital, by Clyde W. Dean.

CAMDEN, N. J.—Keystone Electrical Construction Co. has been incorporated with $125,000 capital to engage in construction and manufacturing, by Jacob L. Furer, Camden.

EAST RUTHERFORD, N. J.—Gas Units Co. has been incorporated with $50,000 capital to manufacture gas burners, by Walter W. Weber, Ramsey, N. J.

NEWARK, N. J.—Precision Products Inc. has been incorporated with 100 shares of common stock to manufacture and deal in metal stamps, by H. Steiner, 20 Bradford place, Newark.

NEWARK, N. J.—Phil Greene Lamp Mfg. Co. has been incorporated with $10,000 capital to manufacture lighting fixtures, etc., by Albert C. Pedrick, Prudential building, Newark.

NEWARK, N. J.—Good-Vu Mirror & Accessory Corp. has been incorporated with $125,000 capital to manufacture mirrors, etc., by Bernard A. Reilly, 790 Broad street, Newark.

NORTH BERGEN, N. J.—Leo Weltersbach Inc. has been incorporated with $50,000 preferred and 1500 shares of common stock to manufacture cutlery, by Atwood C. Wolf, 30 Journal square, Jersey City, N. J.

TRENTON, N. J.—Grant Construction Co. has been incorporated with $100,000 capital, by George A. Cella, Broad Street Bank building, Trenton.

TRENTON, N. J.—Insulated Duct & Cable Inc. has been incorporated with 2000 shares common stock to manufacture insulations for metals, by James E. Mitchell, American Mechanic building, Trenton.

ALEXANDRIA BAY, N. Y.—Hutchinson's Boat Works has been incorporated with $75,000 capital, by Zewiltse & DeYoung, Alexandria Bay.

BUFFALO—Schmidt Sheet Metal Works has been incorporated with $10,000 capital, by J. T. Barnsdall Jr., Erie County Bank building.

ELMIRA, N. Y.—Trayer Bolt Co. has been incorporated with 200 shares of common stock to operate a machine shop, by Mandeville & Personius, Robinson building, Elmira.

NEW YORK—H. Gartlemann & Co. has been incorporated with $10,000 capital to operate a machine shop, by E. E. Cooley, 150 Broadway.

NEW YORK—Dahlgreen Construction Corp. has been incorporated with $25,000 capital, by J. Shapiro, 150 Broadway.

NEW YORK—Reyman Mfg. Co. has been incorporated with 100 shares of common stock to manufacture lighting and heating devices, by M. H. Rosenberg, 290 Broadway.

NEW YORK—Fox Grate Bar & Equipment Corp. has been incorporated with $30,000 capital to operate a foundry, by R. H. Law Jr., 7 East Forty-second street.

MONTREAL—Creswell Pomeroy Ltd. has been incorporated to carry on the business of contractor and manufacturer of builders' supplies, with $100,000 capital, by Rene Chenevert, Max Bernfeld, Harry Batshaw and others, all of Montreal.

New Trade Publications

TURBINE WATER WHEELS—James Leffel & Co., Springfield, O., has issued a bulletin on its turbine wheels for developing power from waterfalls. It is illustrated with diagrams showing position of wheels and their operation.

MILL MOTORS—Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has released a bulletin on direct current mill motors, giving a description and illustrations of an enclosed and an open motor. Details of construction and applications and distinctive features of the motors are brought out.

SAFETY PUSH BUTTON—Lincoln Electric Co., Cleveland, has issued a bulletin on its safety push button which prevents accidental closing of a circuit. The starting button is in the center of a concentric cutoff button, the latter projecting sufficiently to prevent the starting button being pressed otherwise than by a fingertip.

ELEVATORS—Warner Elevator Mfg. Co., Cincinnati, describes in a leaflet the installation of its elevators in a sanitarium at Cleveland where operation is under compressed air with an excess of oxygen.

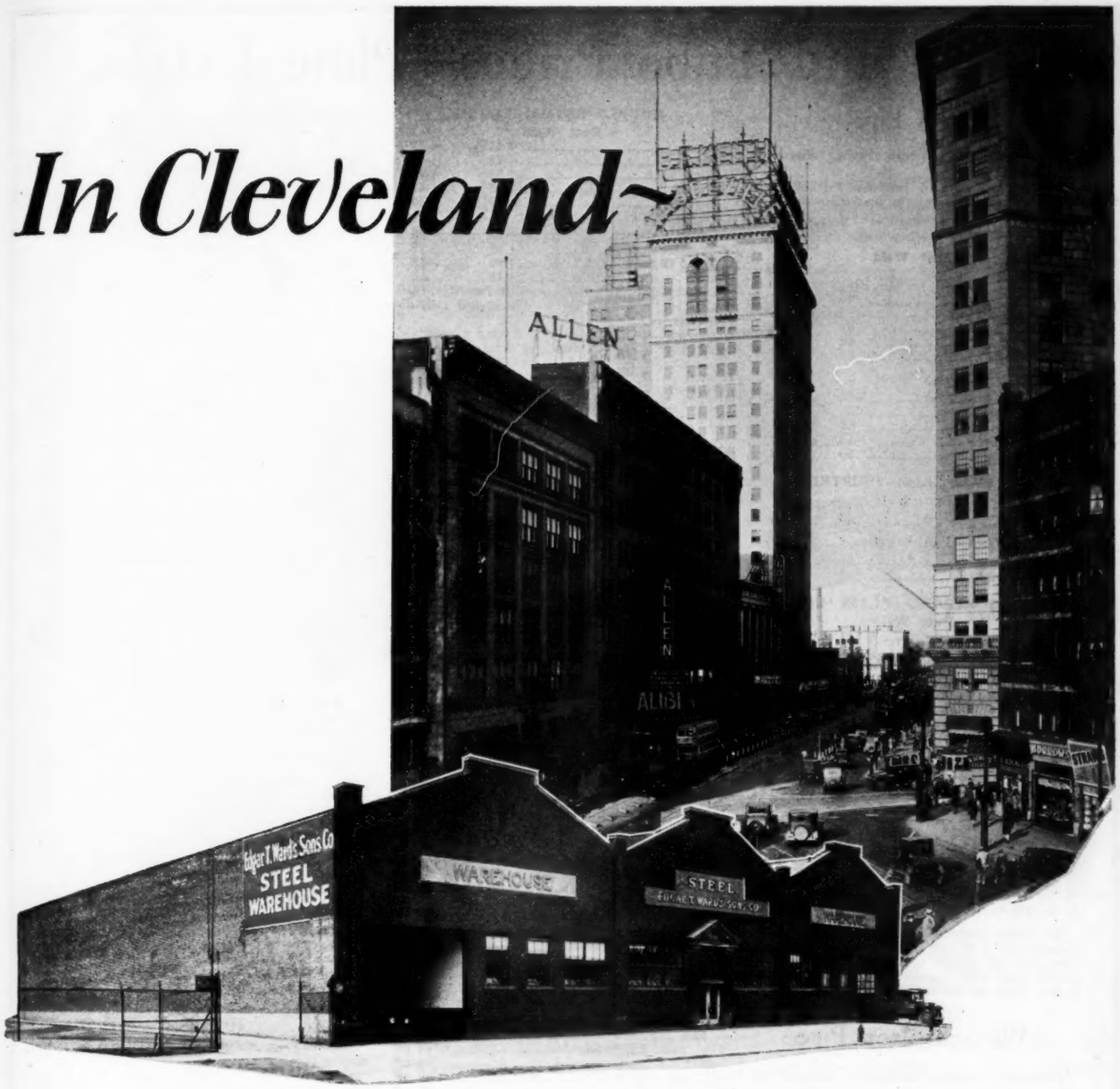
MATERIALS HANDLING—Cleveland Electric Tramrail division of the Cleveland Crane & Engineering Co., Wickliffe, O., shows in a current bulletin some of the applications of its tramrail to handling materials in industrial plants.

BLOWERS—P. H. & F. M. Roots Co., Connersville, Ind., has issued a bulletin on low pressure type rotary positive blowers, equipped with roller bearings. It includes a dimension print, tables of sizes and speeds, capacities and horsepower at various speeds and a review of various types of pumping units.

LUBRICATION—Texas Co., New York, devotes the current issue of its lubrication magazine to description of commercial refrigeration machinery and its need for efficient lubrication. Illustrations and diagrams supplement the text. Types of lubricant best suited to various refrigerating chemicals are indicated.

SHEET METAL—Superior Sheet Steel Co., Canton, O., presents in a current bulletin the advantages of its annealed galvanized sheets as rust-resisting material for outdoor signs. It is profusely illustrated to show the variety of uses to which it can be put.

In Cleveland~



COMMUNITY STEEL SERVICE

Mr. Harry K. Hamilton, Manager, and the *Ward-House* Staff in Cleveland are particularly fitted to give you sound, intelligent steel advice and outstanding service.

Phone Randolph 4722.

EDGAR T. WARD'S SONS CO.

(Division of COLUMBIA STEEL & SHAFTING CO.)

CLEVELAND WARD-HOUSE—1210 E. 55th St.

BOSTON, 44 Farnsworth St.
BUFFALO, 39 River St.
CHICAGO, 1455 W. 37th St.
DETROIT, 1300 Fort St., West
NEW YORK, 373 Pearl St.
NEWARK, 400 Frelinghuysen Ave.
MILWAUKEE, 57 Ave. and Burnham St.
PHILADELPHIA, Cedar and Westmoreland Streets.

The World's Largest Distributors of Fine Steel Products

Pipe and Tube Prices—Plate Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

To large jobbers these discounts are increased by 1 point and two supplementary discounts of 5 per cent on black, and 1½ points and two supplementary discounts of 5 per cent on galvanized.

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLING

Butt Weld

	Black	Galv.
¼ and ⅜-inch	+11	+36
½-inch	23	5
¾-inch	28	11
1 and 1¼-inch	31	15
1½ and 2-inch	35	18

Lap Weld

1¼ and 1½-inch	Upon application	
2-inch	23	9
2½ to 3½-inch	28	12
4 to 6-inch	30	17
7 and 8-inch	29	16
9 to 12-inch	26	11

REAMED AND DRIFTED

2-inch to 6-inch—Two points less than above

EXTRA STRONG, PLAIN ENDS

¼ and ⅜-inch	+13	+48
½-inch	23	7
¾-inch	28	12
1 to 2-inch	34	18

Lap Weld

2-inch	29	13
2½ to 4-inch	34	20
4½ to 6-inch	33	19
7 and 8-inch	31	17
9 to 12-inch	21	8

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½-inch	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	.....

Jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized wrought iron pipe.

On extra or double extra strong pipe fitted with threads and couplings basing discount lowered 5 points from plain end price. Fitted with threads only, basing discount lowered 3 points for random lengths.

Boiler Tubes

Pittsburgh carload discounts

STEEL (Lap Weld)

2 and 2¼-inch	40 off
2½ and 2¾-inch	48 off
3-inch	54 off
3½ to 3¾-inch	56 off
4-inch	59 off
4½ to 6-inch	48 off

Subject to two 5 per cent discounts on full carload shipments. On less than 10,000 pounds, base discount reduced 6 points and one 5 per cent allowed. On 10,000 pounds to carload, base discount reduced 4 points and two 5 per cents allowed.

CHARCOAL IRON

1½-inch	1 off
1¾-inch	8 off
2 and 2¼-inch	13 off
2½ and 2¾-inch	16 off
3-inch	17 off
3¾ to 3½-inch	18 off
4-inch	20 off
4½-inch	21 off

Subject to 10 per cent discount on full carload lots. On less than 10,000 pounds, base discount reduced 2 points and no preferential allowed. On 10,000 pounds to carload, 5 per cent preferential allowed.

SEAMLESS COLD DRAWN

1-inch	63 off
1¼ and 1½-inch	55 off
1¾-inch	39 off
2 and 2¼-inch	34 off
2½ and 2¾-inch	42 off
3-inch	48 off
3¼ and 3½-inch	50 off
4-inch	53 off
4½, 5 and 6-inch	42 off

SEAMLESS HOT ROLLED

1¾-inch	39 off
2 and 2¼-inch	40 off
2½ and 2¾-inch	48 off
3-inch	54 off
3¼ and 3½-inch	56 off
4-inch	59 off
4½, 5 and 6-inch	48 off

Subject to 5 per cent supplementary discount for carload lots. On less than 10,000 pounds, base discount reduced 6 points. On 10,000 pounds to carload, base discount reduced 4 points and one 5 per cent allowed.

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.30 per cent.....50 to 55 off
Carbon 0.30 to 0.40 per cent.....45 to 50 off

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Outside diameter	Net prices per foot f.o.b. Pittsburgh Gage	Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	**12-gage**	**16c**
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅜-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for lengths over 24 feet.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, date Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weight.

Over 100 to and including 110 inches	.05c
Over 110 to and including 115 inches	.10c
Over 115 to and including 120 inches	.15c
Over 120 to and including 125 inches	.25c
Over 125 to and including 128 inches	.50c

Plates less than ¼-inch or lighter than 11 pounds per square foot.

Over 72 to and including 84 inches	.10c
Over 84 to and including 96 inches	.20c
Over 96 to and including 100 inches	.30c
Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.	

GAGE

Plates Not Exceeding 72 Inches Wide

Plates less than ¼-inch gage, to and including $\frac{9}{64}$-inch; or lighter than 10.2 pounds per square foot, to and including 7.65 pounds square foot..... .20c

Plates Over 72 Inches Wide

Plates less than ¼-inch gage, to and including $\frac{9}{64}$-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds square foot.... .20c
Plates ordered 7.65 pounds square foot .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull materials subject to U. S. Navy Dept. specifications for medium or soft steel	.10c
High tensile hull steel subject to U. S. navy department or equivalent specifications	1.00c
Boiler steel subject to U. S. navy department specifications, classes A-B	1.50c
Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.	

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet.....No extra

Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (Including straight taper plates)
Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with reentrant angles)
Additional extra ..... .20c

Model 24-P ejection type press, having box 100" long, 20" wide, 42" deep. Finished bales measure 20" x 14" x 14" minimum. Can be equipped with power operated loading hopper.

LOGEMANN SCRAP METAL PRESSES

Hydraulically compressed scrap commands at all times the *best price*, and can be conveniently stored and held for favorable markets; it is easily handled; it practically eliminates corrosion; it saves much time in remelting; cars can be easily loaded to capacity.

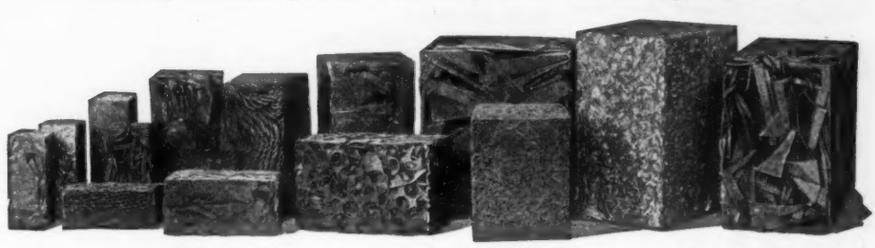
***LOGEMANN Presses* are built in several types and sizes to suit all requirements.**

You cannot go wrong on a LOGEMANN—it's a money maker from the day it is set in operation.

PIONEERS!

LOGEMANN Scrap Metal Presses, pioneers in this industry, enjoy an enviable reputation for long life and economical operation. They are in daily use in practically every large sheet mill, stamping plant, scrap yard, and in metal-working establishments of all kinds.

Our many years of accumulated experience, and services of our Engineering Department are at the disposal of all plants accumulating metal scrap of any kind.



LOGEMANN BROTHERS COMPANY, 3126 Burleigh St., MILWAUKEE, WIS.

"Where-To-Buy"

A classified by-products list of advertisers for the convenience of readers. If you don't find what you want, write us and we will tell you where to get it. ¶Index to advertisements will give you page number of any advertisers and by referring to advertisement you can get full particulars about products.

ABRASIVES (Polishing)
Carborundum Co., The, Niagara Falls, N. Y.
Norton Co., Worcester, Mass.

ACCUMULATORS
Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa.
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.
United Engineering & Foundry Co., Farmers Bk. Bldg., Pittsburgh.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

ACETYLENE (Dissolved)
Air Reduction Sales Co., 342 Madison Ave., New York City.
International Oxygen Co., Newark, N. J.
Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

ACETYLENE GENERATORS
Air Reduction Sales Co., 342 Madison Ave., New York City.
Oxweld Acetylene Co., 30 E. 42nd St., New York City.

ACETYLENE IN CYLINDERS
Air Reduction Sales Co., 342 Madison Ave., New York City.
International Oxygen Co., Newark, N. J.
Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

ACIDS (Pickling)
American Chemical Paint Co., Ambler, Pa.

ADAMITE ROLLS
American Adamite Co., The, 410 Oliver Bldg., Pittsburgh, Pa.

AIR COMPRESSORS — See COMPRESSORS (Air)

ALLOYS
Driver-Harris Co., Harrison, N. J.
Electro Metallurgical Sales Corp., 30 E. 42nd St., New York City.
Lavino, E. J., & Co., Bullitt Bldg., Philadelphia, Pa.
Metal & Thermit Corp., 120 Broadway, New York City.
Titanium Alloy Mfg. Co., Niagara Falls, N. Y.
Vanadium Corp. of America, 120 Broadway, New York City.

ALUMINUM (Tubing)
Summerill Tubing Co., Bridgeport, Pa.

ALUMINUM (Vanadium)
Vanadium Corp. of America, 120 Broadway, New York City.

ALUMINUM BRONZE (Acid Resisting)
Duriron Co., Inc., The, Dayton, Ohio.

ANGLES, TEES, CHANNELS—See STEEL (Structural)

ANNEALING BOXES
Farrell-Cheek Steel Foundry Co., Sandusky, O.
Petroleum Iron Works Co., The, Sharon, Pa.
Smith, George H., Steel Casting Co., Milwaukee, Wis.
Union Steel Casting Co., 62nd and Butler Sts., Pittsburgh, Pa.
United Engineering & Foundry Co., Farmers Bk. Bldg., Pittsburgh.

ANVILS (Cast Steel)
West Steel Casting Co., 805 E. 70th St., Cleveland, O.

APPRAISALS
McKee, Arthur G., & Co., 2422 Euclid Ave., Cleveland, O.

ARCHES (Suspended)
Detrick, M. H., Co., 140 S. Dearborn St., Chicago, Ill.

ARCHITECTS (Industrial)
Austin Co., The 16112 Euclid Ave., Cleveland, O.

AXLES
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Champion Machine & Forging Co., 3675 E. 78th St., Cleveland.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.

BABBITT METAL
Cadman, A. W., Mfg. Co., 2816 Smallman St., Pittsburgh, Pa.
Williams Alloy Products Co., The, Elyria, Ohio.

BALING PRESSES
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.

BANDS (Iron and Steel)
Bethlehem Steel Co., Bethlehem, Pa.

BANDS AND HOOPS (Galvanized Strips)
Sharon Steel Hoop Co., Sharon, Pa.

BAR BENDERS
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.

BARGES (Steel)
American Bridge Co., 71 Broadway, New York City.

BARRELS (Steel, Adjustable)
Cleveland Wire Spring Co., The, 1281 E. 38th St., Cleveland, O.

BARS (Alloy)
Central Alloy Steel Corp., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.

BARS (Concrete Reinforcing)
American Steel & Wire Co., 208 S. LaSalle St., Chicago, Ill.
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Gulf States Steel Co., Brown-Marx Bldg., Birmingham, Ala.
Laclede Steel Co., Arcade Bldg., St. Louis, Mo.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago.

BARS (Iron)—See IRON (Bar)

BARS (Steel)
Bethlehem Steel Co., Bethlehem, Pa.
Bliss & Laughlin, Inc., Harvey, Ill.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Illinois Steel Co., 208 S. LaSalle St., Chicago, Ill.
Illinois Steel Warehouse Co., 1319 Wabansia Ave., Chicago.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Pacific Coast Steel Co., Hunter-Dulin Bldg., San Francisco.
Republic Iron & Steel Co., Youngstown, O.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago.
Tennessee Coal, Iron & Railroad Co., 1351 Brown-Marx Bldg., Birmingham, Ala.
Timken Roller Bearing Co., The, Canton, O.
Youngstown Sheet & Tube Co., Youngstown, O.

BEAMS, CHANNELS, ANGLES ETC.
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Phoenix Iron Co., The, 20 So. 15th, Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago.

BEARING METAL
Williams Alloy Products Co., The, Elyria, Ohio.

BEARINGS (Ball)
New Departure Mfg. Co., The, Bristol, Conn.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Journal)
Buffalo Bronze Die Cast Corp., 100 Arthur St., Buffalo, N. Y.
Hyatt Roller Bearing Co., Newark, N. J.
Timken Roller Bearing Co., The, Canton, O.
Williams Alloy Products Co., The, Elyria, Ohio.

BEARINGS (Motor)
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Roller)
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Roller Bearing Corp. of America, Trenton, N. J.

BEARINGS (Tapered Roller)
Williams Alloy Products Co., The, Canton, O.

BEARINGS (Thrust)
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Timken Roller Bearing Co., The, Canton, O.

BEARINGS AND BUSHINGS (Brass and Bronze)
Buffalo Bronze Die Cast Corp., 100 Arthur St., Buffalo, N. Y.
Erie Bronze Co., 402 W. 19th St., Erie, Pa.
Williams Alloy Products Co., The, Elyria, Ohio.

BENDING AND STRAIGHTENING MACHINES
Cleveland Punch & Shear Works Co., The, 3917 St. Clair Ave., Cleveland, O.
Hinman, D. A., & Co., Sandwich, Ill.
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.
Long & Allstatter Co., Hamilton, O.
Sutton Engineering Co., Park Bldg., Pittsburgh, Pa.

BENZOL AND TOLUOL RECOVERY PLANTS
Koppers Construction Co., The, 1301 Koppers Bldg., Pittsburgh.

BILLETS (Alloy and Carbon Steel)
Central Alloy Steel Corp., Massillon, O.
Washburn Wire Co., Phillipsdale, R. I.

BILLETS (Forging)
Bethlehem Steel Co., Bethlehem, Pa.
Central Alloy Steel Corp., Massillon, O.
Erie Forge Co., Erie, Pa.
Heppenstall Forge & Knife Co., 47th and Hatfield, Pittsburgh, Pa.
Midvale Co., The., Nicetown, Philadelphia, Pa.
Wood, Alan, Steel Co., Conshohocken, Pa.

See Index to Advertisements for Pages Containing Advertisements of Companies Listed Above